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ABSTRACT

The Pennsylvania Chapter of the American Academy of Pediatrics developed a statewide project, the Early Childhood Education Linkage System (ECELS), to provide health professional consultation, training, and technical assistance to improve the quality of early childhood education programs in Pennsylvania. The early childhood programs targeted by ECELS included over 250,000 children in Head Start programs, child care centers, family day care homes, group homes, and nursery schools. All had access to a free audiovisual library, a telephone hot line for technical assistance, linkage to local health professionals who volunteered to be listed on the project's computer registry, a quarterly newsletter on health and safety, and help in obtaining health and safety training for staff. A sample of child care programs was involved in testing the value of self-assessment to target technical assistance and the impact of linkage with nurse-consultants on improved quality of care. This report outlines the purpose of the project and its goals and objectives. A discussion of the methodology, evaluation, and results and outcomes of the sample study is presented, as well as a discussion of project publications and documents, dissemination and utilization of results, and future plans. Appendices include the study instruments, statistical data, and copies of ECELS publications. (TJQ)

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ED 369 503

PENNSYLVANIA CHAPTER OF THE AMERICAN ACADEMY OF PEDIATRICS
EARLY CHILDHOOD HEALTH PROMOTION PROJECT

MCJ#-426025

(October 1989 - June 1993)

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FINAL REPORT

Submitted September 30, 1993

Susan S. Aronson, M.D., F.A.A.P., Project Director
The Early Childhood Education Linkage System (ECLS)
PA Chapter of the American Academy of Pediatrics
The Dayton Building, Suite 220
610 Old Lancaster Road
Bryn Mawr, PA 19010

(215) 520-9125

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Susan S.
Aronson

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ABSTRACT

Project Title: Pennsylvania Chapter of the American Academy of Pediatrics - Early Childhood Health Promotion Project
Project Number: MCJ#-426025
Project Director: Susan S. Aronson, M.D., F.A.A.P.
Grantee Name: PA Chapter of the American Academy of Pediatrics
Address: The Dayton Building, Suite 220
610 Old Lancaster Road
Bryn Mawr, Pennsylvania 19010
Phone Number: (215) 520-9125
Project Period: 10/01/89-9/30/92 (extended to 6/30/93)
Total Amount of Grant Awarded:
Year 1: \$161,032; Year 2: \$174,945; Year 3: \$174,838

I. PURPOSE AND RELATIONSHIP TO SSA TITLE V (MCH) PROGRAMS:

The Early Childhood Education Linkage System (ECELS) provides health professional consultation, technical assistance and training to improve early childhood education programs in Pennsylvania. ECELS is a successful state and federal, public/private partnership. The project had two Co-Principal Investigators: a pediatrician working in the private sector (Susan Aronson, M.D.), and a state agency official who was also a member of the faculty of Pennsylvania State University (Richard Fiene, Ph.D.) The state contributed Dr. Fiene's time to the project as an in-kind investment.

II. GOALS AND OBJECTIVES: The PA AAP established ECELS in 1989 to improve the health status of children in early childhood programs in Pennsylvania. The PA AAP proposed nine objectives: 1. Establish and maintain a statewide system to link early childhood programs with sources of

health expertise to correct health and safety problems; 2. Establish and maintain a statewide structure to plan, improve and evaluate the health component of early childhood programs through surveillance, consultation, technical assistance, and training; 3. Promote control of communicable diseases by improving immunization of children and by improving sanitation practices; 4. Reduce practices leading to baby bottle mouth tooth decay; 5. Promote appropriate access to fluoride for children in early childhood education programs to reduce the incidence of dental caries; 6. Promote improved nutritional status of children in early childhood education programs by modifying inappropriate feeding practices and identifying those who are overweight or underweight; 7. Promote the use of opportunities to provide health education/physical fitness curricula for children, staff and parents in early childhood education programs; 8. Promote early and continuous age-appropriate screening linked with follow-up for children with growth problems, developmental delays, learning disorders, or emotional/social problems that may affect a child's growth, development, and social competence; 9. Promote reduction of preventable injuries in early childhood education facilities.

III. **METHODOLOGY:** The PA AAP designed ECELS to serve all of Pennsylvania's regulated public and private early childhood education/care facilities. To improve the quality of group

care, ECELS established five basic services: 1. Linkages between health professionals and group care facilities for young children drawn from volunteer health professionals listed in the ECELS Health Consultant Registry; 2. Telephone advice for early childhood professionals about health and safety issues; 3. A free lending library of audiovisual materials; 4. A quarterly newsletter, Health Link, distributed to all legally operated early childhood education facilities in the state and to ECELS health consultants; 5. Arrangements for health and safety training for caregivers, licensing staff and health consultants for early childhood education/care facilities in Pennsylvania.

IV. EVALUATION: ECELS designed surveillance instruments to collect self-reported performance data from a sample of child care centers and family child care homes at the beginning and one year after the intervention (pretest/posttest). ECELS also collected activity data.

V. RESULTS/OUTCOMES: ECELS successfully used individual and aggregated data collected from the sample to target interventions. Corrective actions included technical assistance, training, development of new resources, and education of makers of public policy. The child care facilities in the sample reported many improvements associated with self-assessment and access to statewide services available from ECELS. However, for certain health and safety risks, facilities linked with a Nurse-Consultant

reported greater improvement than those not linked. One shortcoming was that in both the pretest and the posttest, only 56% of the centers in the sample reported feeding practices that prevent baby bottle mouth decay.

VI. PUBLICATIONS/PRODUCTS: Besides quarterly publication of Health Link, materials developed by ECELS include: several types of training curricula, a booklet for staff and consultants (Model Child Care Health Policies), a booklet for parents and staff (Preparing for Illness), a device to check immunization records (Immunization Dose Counter), a wallet-sized parent-held immunization record (Health Passport), fact sheets on childhood health problems, and forms for administration of the health component.

VI. DISSEMINATION/UTILIZATION: The national AAP and the National Association for the Education of Young Children (NAEYC) agreed to distribute the Immunization Dose Counter nationally. NAEYC also agreed to distribute "Model Child Care Health Policies" and "Preparing for Illness." ECELS is working with New Jersey, North Carolina, and West Virginia on replication and provides information to other states.

VIII. FUTURE PLANS/FOLLOW-UP: Now, ECELS is the primary source of activities to improve health and safety in child care in Pennsylvania. The state used Block Grants to contract with the PA AAP for the ongoing services of ECELS.

IX. SUPPORT/RESOURCES TO REPLICATE: As a statewide program, ECELS now has an operating budget of \$410,000.

Annotation:

The PA Chapter of the American Academy of Pediatrics developed a statewide project (ECELS) to provide health professional consultation, training, and technical assistance to improve the quality of early childhood education programs in Pennsylvania. The early childhood programs targeted by ECELS included over 250,000 children in 10,000 Head Start programs, child care centers, family day care homes, group homes, and nursery schools. All had access to a free audiovisual library, a telephone hot line for technical assistance, linkage to local health professionals who volunteered to be listed on the project's computer registry, a quarterly newsletter on health and safety, and help in obtaining health and safety training for staff. A sample of child care programs were involved in testing the value of self-assessment to target technical assistance and the impact of linkage with nurse-consultants on improved quality of care.

Key Words:

Advocacy, Caregivers, Child Day Care, Education of Health Professionals, Families, Health Education, Health Promotion, Immunization, Infections, Injuries, Nurses, Parent Education, Pediatric Care Providers, Preschoolers, Preventive Health Care, Preventive Health Care Education, Public Health Nurses, State Programs, Well-Child Care

NARRATIVE

Project Title: Pennsylvania Chapter of the American
Academy of Pediatrics - Early Childhood
Health Promotion Project

Project Number: MCJ#-426025

Project Director: Susan S. Aronson, M.D., F.A.A.P.

Grantee Name: PA Chapter of the American Academy of
Pediatrics

Address: The Dayton Building, Suite 220
610 Old Lancaster Road
Bryn Mawr, Pennsylvania 19010

Phone Number: (215) 520-9125

Project Period: 3 years From 10/01/89 TO 09/30/92
(extended to 6/30/93)

Total Amount of Grant Awarded:

Year 1: \$161,032; Year 2: \$174,945; Year 3: \$174,838

I. PURPOSE OF PROJECT AND RELATIONSHIP TO SSA TITLE V MATERNAL AND CHILD HEALTH (MCH) PROGRAMS

The PA Chapter of the American Academy of Pediatrics (PA AAP) set up the Early Childhood Education Linkage System (ECELS), to improve health and safety in early childhood education/care programs. In 1990, ECELS began to serve an estimated 10,000 legally regulated public and private early childhood education/care programs with an estimated capacity of 250,000 children. The program lists maintained by the

state included 4,275 licensed center-based child care facilities (facilities for more than 6 children) and 5,725 registered small family child care homes. Among the center-based facilities were 529 group homes (large family child care homes for 6-12 children), 802 nursery schools, 2,884 child care centers, and 60 Head Start programs. In Pennsylvania, small family child care homes serving fewer than four children are legally unregulated.

About a third of the population under five years of age is enrolled in an early childhood education program at any given time. By the time they enter school, nearly 80% of young children have participated in group care.¹ With so many young children in group care, health professionals who collaborate with early childhood educators find many opportunities for health promotion. The mainstream of the health profession has already focused on control of injuries and infectious disease in these settings.

The Maternal and Child Health Bureau provides leadership to both the public and private sector to build the infrastructure for the delivery of health care services to all children (and mothers) in the Nation. The Bureau's

¹Dawson DA, Cain VS. Child care arrangements: Health of our Nation's children, United States, 1988. Advance data from vital and health statistics; no 187. Hyattsville, Maryland: National Center for Health Statistics. 1990.

program of Maternal and Child Health Improvement Projects supported ECELS as a demonstration of innovative service to young children in group care settings. This project was funded under the 1989 MCHIP "Priority for Early Childhood Health: IV. Child Health and Safety Programs in Child Care Settings."

II. GOALS AND OBJECTIVES

The PA AAP established ECELS as a public/private partnership at the state and local level to improve the health and safety of young children in early childhood education/care facilities in Pennsylvania. In 1989, the PA AAP proposed nine objectives:

1. Establish and maintain a state-wide system to link early childhood education/care facilities with sources of health expertise to correct health and safety problems.
2. Establish and maintain a state-wide structure to plan, improve and evaluate the health component of early childhood education/care facilities through training, technical assistance, and resource development.
3. Promote control of communicable diseases by improving immunization of children and sanitary practices.
4. Reduce practices leading to baby bottle mouth tooth decay.
5. Promote appropriate access to fluoride intake for children in early childhood education/care programs to

reduce the incidence of dental caries.

6. Promote improved nutritional status of children in early childhood education programs by modifying inappropriate feeding practices and identifying those who are overweight or underweight.

7. Promote the use of opportunities to provide health education/physical fitness curricula for children, staff and parents in early childhood education programs.

8. Promote early and continuous, age-appropriate screening linked with follow-up for children with growth problems, developmental delays, learning disorders, or emotional/social problems that may affect a child's growth, development, and social competence.

9. Promote reduction of preventable injuries in early childhood education/care facilities.

III. METHODOLOGY

Planning: On April 11, 1989, Immediate Past-President of the PA AAP (Susan Aronson, M.D.) and the Nursing Consultant from Region III Department of Health and Human Services (Jane Courey, M.S., R.N.) convened a meeting of a statewide steering committee for the project at the Region III offices of HHS. The steering committee included representatives of Pennsylvania public and private health professionals, Head Start and child care providers. Later, ECELS expanded the Advisory Committee to include more representatives of state

government and private agencies, early childhood education professionals, and health professionals. (See Appendix A for a list of types of representatives on the ECELS Advisory Committee.)

The project had two Co-Principal Investigators: a pediatrician working in the private sector (Susan Aronson, M.D.) and a state official who was also a member of the faculty of Pennsylvania State University (Richard Fiene, Ph.D.) Members of the ECELS Advisory Committee not only advised ECELS about performance criteria for early childhood education/care programs, they also offered the resources of their agencies and professions to solve deficiencies identified by ECELS. At annual day-long meetings, ECELS reported on progress made since the previous meeting, and reviewed current surveillance data with the committee. Then the committee members worked in small groups to develop corrective action plans for the coming year.

Funding: In addition to the grant from the Bureau of Maternal and Child Health, the PA AAP obtained funds from the Robert Wood Johnson Foundation, Pennsylvania state government, MERCK Vaccine Division, McNeil Consumer Products and the Terri Lynne Lokoff Foundation. The state also contributed Dr. Fiene's time to the project.

Surveillance/Needs Assessment: ECELS developed self-assessment instruments from published materials, and from draft standards being developed in a concurrent project of the American Public Health Association and the American Academy of Pediatrics. During the study period, ECELS maintained surveillance for common problems in child care settings by aggregating self-assessment data from sites in a study sample.

Study Questions: ECELS also used data from the sample to study two questions: a) whether self-assessment and access to five basic services offered by ECELS led to improvement in reported compliance with recommended health and safety practices, and b) whether linkage with a Nurse-Consultant for a year would augment reported compliance associated with self-assessment and access to the five basic services provided by ECELS. The sample selection and evaluation design for the study are described in Section IV.

Basic Services: ECELS established five basic services:

1. a computer registry of health professionals who volunteered to be linked with early childhood education/care programs in their communities;
2. a telephone hot line for advice about health and safety issues for early childhood professionals;
3. a free audiovisual lending library;

4. a quarterly newsletter, Health Link, distributed to all licensed or registered PA early childhood programs and ECELS health consultants; and

5. training for child care providers, health consultants, licensing inspectors, and staff of resource and referral agencies.

Targeted Interventions: The facilities that participated in the study sample designated one of their employees as a Health Advocate. ECELS linked a subset of the facilities in the sample with a Nurse-Consultant. Both the Health Advocates and Nurse-Consultants attended training provided by ECELS. The Health Advocates received training on how to perform the self-assessment. The Nurse-Consultants received training on how to serve as a consultant to an early childhood education/care facility. ECELS linked each Nurse-Consultant with a child health physician for back-up.

The Health Advocates coordinated submission of data and documents from their facilities. They were also their program's liaison with ECELS and with the Nurse-Consultant assigned to them. Project staff reviewed the facility's health-related forms and documents and compiled the non-compliant responses from the facility's self-assessment into a computer-generated profile. ECELS returned the computer-generated profile and an annotated copy of health-related

documents submitted by the program to the Health Advocate. ECELS also sent a copy of this material to the linked Nurse-Consultants so the nurses could work with the facility on an improvement plan.

ECELS staff planned and implemented statewide interventions for systemic problems identified by aggregated self-assessment data from the facilities in the sample. For example, statewide low compliance with the requirement for training of caregivers in first aid and other health and safety practices led to an initiative to build the capacity of the American Red Cross to deliver the ARC Child Care Course. Few facilities had adequate written health policies. This finding led to an initiative to develop a model set of written health policies for providers to use. Both the self-assessment data and the questions received on the telephone hot line revealed the need for training of parents and caregivers on how to prepare for and manage child illness. This finding led to the development of a booklet and fact sheets that give appropriate guidelines. ECELS offered these interventions to all child care programs in the state.

IV. EVALUATION

The evaluation served three functions. First, the data collection and feedback to the participants focused their

attention on areas of non-compliance. Second, ECELS used the data generated by the evaluation as described in Section III. above to identify systemic problems and plan interventions for all child care programs. Third, ECELS used the self-assessment data to address the two study questions. ECELS was a demonstration, not a research project. However, the Principal Investigators followed a demanding evaluation protocol.

Meeting the Goals and Objectives of the Project: The investigators collected data on services provided by ECELS and measured outcomes in the study sample to evaluate how well ECELS met the nine objectives of the project.

Study Design: The investigators evaluated the outcome of the self-assessment and access to ECELS services with a pretest (1990)/posttest (1991) comparison of performance reported by center-based child care facilities in the sample. Measurement of the impact of linkage of Nurse-Consultants required comparing the reported pretest/posttest compliance of center-based facilities that had a Nurse-Consultant during the first year of the study (linked) with that of centers linked with a Nurse-Consultant only after the first year (delayed-linked). Both the linked and delayed-linked groups participated in training, collected self-assessment data, received feedback and materials

related to their site's data, and had access to telephone advice from ECELS. The hypotheses were: 1) both groups would improve, but 2) the linked group would show greater improvement than the delayed-linked group.

All the small family child care homes were linked with Nurse-Consultants. ECELS used the self-assessment data from the small family child care homes to plan interventions, but not to measure the impact of linkage.

The Sample: One of the principal investigators (Richard Fiene, Ph.D.) used the state agency lists of regulated programs to select a stratified random sample of potential participants in the study using the sampling guidelines specified by Cochran (1977). The ECELS Coordinator (Herberta Smith, P.N.P., R.N.) individually contacted potential participants to recruit them for the study. When a facility refused the invitation to participate, she recruited the next site on the list.

Table 1 describes the population of sites and the history of the sample from the initial selection to the end of the project. The pretest group included nearly equal numbers of for-profit and non-profit child care centers. Most of the drop-outs among the child care centers between the pretest and posttest were for-profit facilities.

Table 1: ECELS SAMPLE - 1990 and 1991

Description of Group	Type of Facility											
	small family child care homes	large family child care home (group home)	nursery schools	child care centers	Head Start		sub-total - all center- based child care		Total - all types of child care			
estimated number of facilities in PA in 1990-91	5,725	529	802	2,884	60		4,275		10,000			
Invited	51	5	14	117	25		161		212			
self-assessment training	30	5	7	86	21		119		149			
submitted data in 1990	28	5	4	72	16		97		125			
submitted data in 1991	20	3	4	50	10		67		87			
linked or delayed-linked submitted data in 1990	L	L	L	L	L	DL	L	DL	L	DL		
	28	2	2	26	8	8	38	58	66	59		
linked or delayed-linked submitted data in 1991	20	2	2	26	8	2	38	29	58	29		

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ECELS recruited the Nurse-Consultants as volunteers from both the public and private sector. When a facility accepted the invitation to participate, the ECELS Coordinator alternately assigned the facility to one of two subsets, linked or delayed-linked. Both the Health Advocates and the Nurse-Consultants received a certificate of appreciation recognizing their participation in the project. Other than the benefit of participating in the intervention, ECELS gave no compensation to the Health Advocates and Nurse-Consultants.

Prior to the training, the ECELS Coordinator contacted the director of each facility and each Nurse-Consultant. She told the director of the facility that the site would be assigned to the linked or delayed-linked subset when the Health Advocate came for training. Based on her discussions with the Nurse-Consultants about the location of the communities where they worked, she adjusted the assignment of the facilities to the linked and delayed-linked subsets so the linked facilities would be located in the community where the participating Nurse-Consultants worked.

Besides adjustments for location, the ECELS Coordinator attempted to maximize the size of the pretest sample with last-minute substitutions for facilities that withdrew prior

to training. Toward the end of the entry of facilities into the study, one of the Principal Investigators (Richard Fiene, Ph.D.) noted that more sites were in the linked than in the delayed-linked group. At this time, the ECELS Coordinator was recruiting facilities from the western part of the state. To compensate for the imbalance in the subsets, the ECELS Coordinator began to assign more sites to the delayed-linked group. As a result, a disproportionate number of the delayed-linked group came from the western part of the state.

Instruments: (See Appendix B for copies)

Activity Report Form: On a quarterly basis, the Health Advocates and the Health Consultants returned a form to document their time and activities related to the project. These data were submitted to the Early Childhood Research and Evaluation Project Office at Pennsylvania State University at Harrisburg.

Injury Report Form: ECELS supplied multi-copy injury report forms to the participating programs during the study period. As part of the study design, ECELS asked the participating child care programs to send ECELS a copy of reports of injuries where medical care was required. Over the course of the study, ECELS supplied several thousand copies of the forms to child care facilities in the sample. However, few

facilities sent any completed injury reports to ECELS. Several Health Advocates told ECELS that because they were concerned about exposure to legal action, they would not let the reports leave the confidential files of their facilities. ECELS abandoned analysis of injury data in this study.

Enrollment/Attendance/Symptom Record: Each facility was asked to submit monthly enrollment, attendance, and symptom records kept for each group of children in the program. Many providers said they found the form helped them spot patterns of illness for individual children and among classrooms in their facilities.

Self-Assessment of Site Performance (ECELS-C and ECELS-FCCH): ECELS prepared two instruments from assessment tools used in an earlier study²: one for center-based programs (ECELS-C), and one for family child care homes (ECELS-FCCH). The Health Advocates received the instruments and self-addressed mailing envelopes at the time of the self-assessment training. Each instrument consisted of three sections: a questionnaire, a record check, and an observational checklist to be completed at the site. The observational checklist included all performance items that

² Aronson S and Aiken L. Compliance of child care programs with health and safety standards: impact of program evaluation and advocate training. Pediatrics 65:318-325, 1980.

could be directly viewed during a tour of the facility in indoor play areas, food preparation and service areas, toilet and diapering areas, other indoor areas, outdoor play areas, pedestrian areas used by children in the facility, and vehicles. The record check included items that could not be directly observed during a site tour, but should be documented. The questionnaire included items that were not likely to be either directly observed during a site tour or documented in records. In addition, the instrument directed the respondents to gather and submit all health-related documents and forms that might contain the facilities health policies.

For family child care, ECELS gave the observational checklist to the Nurse-Consultant to complete with the small family child care provider. ECELS hoped the Nurse-Consultants would use the completion of the checklist to foster a relationship with the child care provider and help the provider take the Nurse-Consultant into appropriate parts of her home. ECELS instructed the Nurse-Consultants assigned to centers to observe the operation of the program within one month after the training of the Health Advocate, but they were not required to collect any pretest data.

Respondents reported that the completion of ECELS-C required between one and two person-days. The completion of ECELS-

FCCH required three to four hours. In the 1990 editions of ECELS-C and ECELS-FCCH, respondents noted that some items were confusing. ECELS dropped these items from the 1991 instruments. New items were added to the 1991 instruments to measure risks not assessed by the 1990 edition.

Data Collection: Early childhood programs entered the project in a phased-in fashion, so that Health Advocates received training between March and September of 1990. ECELS organized five training groups so that all the sites to be included in the study from one of five areas of the state received training together. The Health Advocates submitted the baseline (pretest) compliance data immediately following the training, before taking any corrective action.

Quarterly, ECELS mailed the Health Advocates and Nurse-Consultants a reminder to collect and submit activity data. The facilities received the posttest instruments by mail one year after they submitted the pretest data. ECELS collected pretest data between April and December 1990; posttest data arrived between April and December 1991.

The record check required submission of the dates of immunization and preventive health services from 8 randomly selected child records per center facility and from all the records for children in the small family child care homes.

ECELS received data for 758 children in 1990 and for 783 children in 1991. When ECELS closed the data set, paired data were available for a total of 67 centers (38 linked and 29 delayed-linked) and 20 small family child care homes.

Data Processing and Analysis: The Office of Early Childhood Research and Evaluation Projects at Penn State University-Harrisburg (PSU-H) compiled and analyzed the data for the first three years of the project. The Biostatistics Division of The Children's Hospital of Philadelphia (Eric Feuer, Ph.D., Avital Canaan, Ph.D. and Chris Boardman) subsequently tabulated the ECELS-C data again, analyzed and refined the pretest/posttest comparisons and reviewed this report. Only items that were identical in 1990 and 1991 ECELS-C instrument were used for the pretest/posttest comparisons.

As soon as a facility submitted the pretest instruments, the staff of the Research and Evaluation Division of the Pennsylvania Department of Public Welfare coded and sent the data to the ECELS subcontractor (Steven Melnick, Ph.D.) at PSU-H. The staff at PSU-H reviewed and compiled the data as a computer-generated list of compliance scores for each area of the health component and a description of items where the facility was not compliant with recommended performance.

The data processing staff tabulated the documented immunization and health service data in two ways. One approach was to tabulate the numbers of children whose service dates showed they were up-to-date. The second approach was to determine whether the facility was compliant with the state's licensing practice that accepts 80% of children up-to-date as substantial compliance for the facility. ECELS used the first approach to monitor immunization completeness in the study population. The data coders used the second approach when they entered the data to determine compliance of the facility with performance criteria.

The ECELS-C and ECELS-FCCH instruments included instructions to skip inapplicable items. In such cases, the respondent selected code "9" and drew a diagonal line through deliberately skipped items. The coding staff attempted to check that items were skipped only when they did not apply. However, the instrument was self-administered, and only limited verification of skipped responses was feasible. Coding staff handled both deliberately skipped items and items with no response as not applicable, i.e. excluded from the sample for that item.

The ECELS Director (Susan Aronson, M.D.) and the ECELS Administrator (Herberta Smith, P.N.P., R.N.) independently

used written criteria for the content of child care health policies to evaluate the first twenty sets of health-related documents submitted by the facilities. The readers annotated each set of health policies with suggestions for revisions to meet the criteria. After establishing interrater reliability for the criteria, all subsequent health policies were read, coded and annotated only by the ECELS Administrator.

Sources of Bias: The study has at least four sources of bias. First, the assignment of facilities to the linked and delayed-linked subsets was not random. In some cases, facilities originally assigned to the delayed-linked group were reassigned to the linked group because the facilities were located in communities where Nurse-Consultants worked. These communities might have more resources for linked sites to use to improve compliance.

Second, a disproportionate share of the delayed-linked facilities came from the (late-entering) western part of the state. Other studies by Richard Fiene, Ph.D. found higher compliance levels among facilities in the western part of Pennsylvania. A tendency to become more compliant from self-assessment alone could diminish the affect of linkage. Third, facilities that provided matched pretest/posttest data may have been more likely to take corrective action

than those that dropped out after the pretest assessment. Facilities that remained in the study through the posttest might be more likely to show improvement than those that left the study after the pretest.

Fourth, the data were self-reported and not verified. Although ECELS urged the respondents to complete the instruments completely objectively, they may have interpreted items differently or intentionally reported inaccurately. Unfortunately, ECELS does not have the resources to explore the influence of these sources of bias on the findings.

Testing the Study Hypotheses:

Item-by-Item Analysis: For each of the 362 items on the ECELS-C, the investigators explored two hypotheses:

Hypothesis 1: Reported compliance rates will improve between the pretest (1990) and posttest (1991) surveys for the study group as a whole.

Each item had up to 67 paired binary responses. For the sites that responded to the item, the coders entered the response from each facility as either compliant or non-compliant in the pretest and in the posttest. The appropriate statistical test for change in a paired binary

response is a McNemar Test. (See references in Appendix E.) The investigators used the McNemar Test to determine if there was a statistically significant improvement in reported compliance rates from 1990 to 1991.

Hypothesis 2: The linked sites will show greater gains in reported compliance between the pretest (1990) and the posttest (1991) than the delayed-linked sites.

Each item had up to 38 paired binary responses for the linked sites and up to 29 paired binary responses for the delayed-linked sites. The appropriate statistical test to determine if the change in one set of binary paired responses differs from the change in a second, independent set is a Two-Sample McNemar Test (See references in Appendix E.) The investigators used this test to determine if there was a statistically larger improvement in the compliance rates in the linked versus the delayed-linked sites. (See Appendix E for more details on how the statistical tests were conducted. The tables in Appendix C2 describe and list data for each item by risk area. The printout in Appendix C5 is an alphabetical listing of the items with the data available for each.)

Of the 362 items in the analysis, 1 in 20 are likely to have a p value less than 0.05 based on chance alone. To control

for the overall significance level desired for the entire study, a Bonferroni Adjustment is often made. (See references in Appendix E.) If the level of significance desired for the entire study is 0.05, each test should be done at the $0.05/362 = 0.0001381$ level. When such a stringent cut-off for testing is used, even fairly large differences might not be considered significant. For example, for item N4094 (breakfast foods served) the change in reported compliance pretest to posttest was from 48% to 94% among the 33 sites that served breakfast. The p value for the test was 0.00073 which would not be considered significant after the Bonferroni Adjustment.

Although p values less than 0.05 are presented in the tables in Appendix C, the reader should exercise considerable caution in interpreting any result to be statistically significant unless $p < 0.0001381$. Especially for hypothesis 2, this study lacks sufficient power to detect a fairly large effect after making a Bonferonni Adjustment because the sample size is only 38 for the linked facilities and 29 for the delayed-linked facilities. Given the limitations described above, the p values should be used as a descriptive (rather than an inferential) statistic to point out for which items a fairly large change was observed.

Weighted Summary Analysis: The investigators assigned the

362 compliance items from the ECELS-C to 17 risk area scales. Some items were included in more than one scale. The 17 scales were grouped into three major areas of health and safety in early childhood education/care: Injuries, Infectious Disease, and Health Promotion. The 17 risk area scales are:

Injuries - General, Falls, Choking, Poisoning, Fires and Burns, Emergency Preparedness, Transportation

Infectious Disease - Immunization, General Sanitation, Food Service Sanitation, Diapering/Toileting

Health Promotion - Documentation of Routine Health Supervision Services, Child Development/Sexual Abuse Prevention/Parent Involvement, Nutrition, Dental Health, Staff Health, Written Health Policies.

A jury of two pediatricians, two pediatric nurses, and an early childhood educator rated each item in each risk area scale. The raters assigned a score of 0-5, with 5 the rating for the highest risk of death, disease or disability. The ratings were averaged and risk values assigned to the items: high risk (3) for an average rating > 3 , moderate risk (2) for an average rating < 3 , but > 2 , and low risk (1) for an average rating < 2 .

The investigators obtained a weighted summary score for each facility for each risk area scale by summing the risk value

for those items with which the site was compliant and dividing the sum by the maximum possible score for that scale. This procedure eliminated the items coded as not applicable for that site. The tables in Appendix C1 present the aggregate weighted scores by risk area for all centers with matched pretest/posttest data and, separately, the scores for the linked and delayed-linked subsets.

To determine if the weighted summary scores for a particular scale improved from pretest to posttest, the investigators used a paired T Test for the 67 center-based facilities as a group, and for the linked and delayed-linked facilities separately. To test if the weighted summary scores for each scale improved more in the linked than in the delayed-linked facilities, the investigators used an analysis of covariance model. (See reference in Appendix E.) In the model, the posttest score was used as the dependent variable. A statistical test was conducted to determine if after adjusting for the level of the covariate (i.e. the pretest score), the posttest score was higher in the linked or delayed-linked sites.

For each of these tests, the reader should again exercise caution in the interpretation of p values. Using the Bonferroni Adjustment for the 17 scales, only a p value of less than $0.05/17 = 0.002941$ should be considered

statistically significant. As in the item analysis, the p values are more appropriately used as a descriptive statistic to help point out those scales where a large improvement occurred. In addition, the weighted risk area scores offer a snapshot of compliance by area of risk across the sample as a whole and facilitate overall comparison of compliance of the linked and the delayed-linked facilities. For example, the lowest weighted risk area scores for the whole sample were: for injuries, transportation safety (57% at pretest and 62% at posttest); for infectious diseases, immunization (66% at pretest and 67% at posttest); for health promotion, written health policies (9% at pretest and 15% at posttest). (For analysis of differences between the 1990 and 1991 weighted scores for the linked and delayed-linked sites see Appendix E.)

V. RESULTS/OUTCOMES (POSITIVE AND NEGATIVE):

Activity of Health Advocates and Health Consultants: Table 2 shows the mean hours the Nurse-Consultants and the Health Advocates spent working on the project during the year between the pretest and posttest. Overall, the observed changes in performance should be viewed in light of so few hours spent by either the Health Advocate or the Nurse-Consultant.

Table 2: Median hours per year spent on ECELS activity by Nurse-Consultants and Health Advocates

Type of Activity	Nurse-Consultants	Health Advocates
meetings at site	5.17	6.88
phone calls	1.09	1.36
contacting ECELS	0.50	0.60
contacting health professionals	1.38	3.20
providing health education	2.58	4.08

Outcomes Related to the Goals and Objectives

1. Establish and maintain a state-wide system to link early childhood education/care facilities with sources of health expertise: The Health Consultant Registry is a computer data base of health professionals who have volunteered to work with child care facilities in their communities. ECELS recruits for the registry through the meetings, publications and membership directories of health

professional organizations, and contacts of the ECELS Advisory Committee. Table 3 lists the roles of the 725 members of the Health Consultant Registry as of July, 1993. Of Pennsylvania's 67 counties, 63 have at least one health consultant.

Table 3: ECELS Health Consultant Registry - 7/93	
Role	# Individuals
Pediatricians	169
Dentists	23
Family Practice Physicians	19
Nurses	377
Nutritionists	59
Mental Health/Spec. Ed.	21
Health Educators	3
Community Health Agencies	29
Pediatric Subspecialists	11
Dental Hygienists	6
Optometrists	6
Speech, Language, Audiology	2
	Total = 725

2. Establish and maintain a state-wide structure to plan, improve and evaluate the health component of early childhood education/care facilities through surveillance, consultation, technical assistance, and training: The tables in Appendix C1, C2, C3 and C4 summarize the surveillance data collected by ECELS by area of risk. As is described in Section III and under the other objectives, the staff of ECELS and the ECELS Advisory Committee used the study data to identify compliance problems and design corrective actions. ECELS provided training, linkages, and improved resources where data showed a need for corrective action.

The publication of model health policies was a major initiative not described elsewhere in this report. Health policies provide a plan for overall health component improvement. Compliance with criteria for written health policies improved somewhat pretest to posttest, but the weighted summary score was still only 15% at the posttest.

In 1993, ECELS published model health policies to address this need. ECELS staff culled the best written health policies from those submitted by the study sample, and used them with national standards to develop a draft of a "fill-in-the-blank" set of model health policies. Consultants from the Health Consultant Registry, a group of 55 early

childhood educators, and the Early Childhood Committee of the PA AAP revised and field-tested many drafts. ECELS sent the final version of the model health policies to every center. A self-learning module accompanied the model health policies so caregivers who participated in adapting the policies for their facility could submit their customized version and a self-test to receive credit toward the state-mandated training requirement. The model health policies are available on disk for those with word processors. Both versions are available to national users from the National Association for the Education of Young Children.

3. Promote control of communicable diseases by improving immunization of children and sanitary practices;

Immunization: The data from the study sample and informal feedback from the Health Advocates and the Nurse-Consultants suggested that early childhood educators had two problems with assuring immunization. First, they had great difficulty knowing when children were up-to-date with recommended schedules. The schedules are complex and the evaluation of a child's record is a challenging task. Second, when children were found who needed immunization, the cost of the vaccines, inconvenient services, delays and missed opportunities by health professionals, and caregiver reluctance to exclude underimmunized children were significant barriers to compliance.

The study data and corrective actions by ECELS influenced public policy and resources for immunization promotion at a variety of levels. The state cited ECELS data in support of an emergency measles regulation. The Governor and legislators used ECELS data to support passage of Act 35, legislation that mandated coverage of vaccines by health insurance. The PA Department of Health adopted the hand-held immunization record for parents developed by ECELS.

With funding and graphics support from MERCK Vaccine Division, and technical support from the Centers for Disease Control and the (national) American Academy of Pediatrics, ECELS developed a device to help early childhood educators and licensing inspectors evaluate a child's immunization record. In Pennsylvania, ECELS distributed the Immunization Dose Counter to every regulated child care facility, child care licensing inspector, pediatrician, and public health clinic. The national American Academy of Pediatrics and the National Association for the Education of Young Children distributed a total of 240,000 copies of the Immunization Dose Counter.

Although overall compliance with immunization did not improve, the gain in documented immunization against Haemophilus influenzae type b (Hib) is striking. Documented Hib immunization (item RC3052) improved from 39% compliance

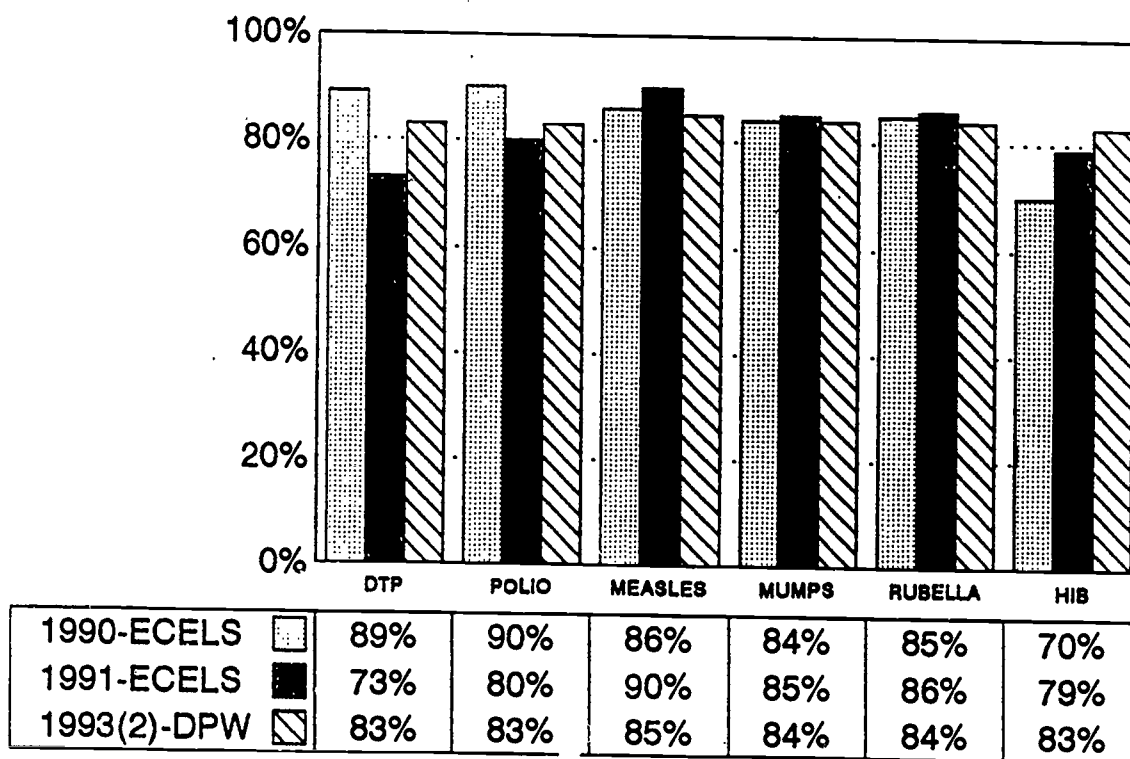
in 1990 to 61% compliance in 1991 ($n = 67$, $p = 0.00592$). ECELS heavily promoted Hib immunization to the early childhood education/care facilities because of the increased risk of Hib disease in this population.

In 1992, the Pennsylvania Department of Public Welfare adopted the surveillance technology developed by ECELS to track immunization and health service data documented in child records of licensed child care facilities. Based on the methodology and results from the study sample, ECELS helped the state child care licensing office design and implement a statewide system of immunization and health service data collection coupled with technical assistance from ECELS for non-compliant sites. As a state official, one of the Principal Investigators (Richard Fiene, Ph.D.) played a key role in the inclusion of this technology in state operations. Pennsylvania has already noted improvements in the levels of documented preventive health services over the first nine months of the new system.

To launch the new system, ECELS provided training for the state licensing inspectors and data processing staff in the Department of Public Welfare (DPW) on how to sample child health records and evaluate documented immunizations and other preventive health services. During their annual licensing visits to child care centers, the licensing

inspectors conduct an on-site evaluation of the facility's compliance with state regulations. Afterward, they forward a copy of the immunization and screening dates obtained in their audit to DPW's state-level office. There, state personnel tabulate the data on a quarterly basis for each of four regions of the state. The tabulated data are analyzed by ECELS and forwarded by DPW to the Pennsylvania Department of Health. Figure 1 compares the immunization data collected from the ECELS sample pretest to posttest with data from facilities inspected by DPW during the second quarter of 1993.

Figure 1: Children with Up-to-date Immunizations



1990 = 758 child records from 125 sites, 1991 = 783 child records from 87 sites (ECELS)
 1993(2) = 4,423 in 907 sites (DPW)

The reduction and recovery of documented DTP immunization levels associated with the media scare of 1990 and continuing improvements in documented Hib immunization are evident in Figure 1. Since 1990, documentation of up-to-date immunization in licensed centers has improved.

In 1993, ECELS began to use the data compiled by the state to offer linkage with a local health professional to facilities where the licensing audit found incomplete documentation of immunization and preventive health services for children in care. The health consultant linkage is both to improve documentation and, where appropriate, help families identify a source of primary pediatric care (a "medical home") where children can receive preventive care.

Family child care homes are not routinely visited by state inspectors in Pennsylvania. However, in 1993, ECELS sent a video prepared by the American Academy of Pediatrics and immunization checking tools developed by ECELS to every registered family child care provider in the state. ECELS gave providers who correctly assessed the immunization records of children in their care a certificate of credit that could be applied toward the state-mandated training requirement. ECELS also offered to link small family child care providers with a health consultant when corrective action was needed.

The lowest level of compliance with documentation of up-to-date immunization reported in the ECELS sample was for Hib (63%) in nursery schools. Pennsylvania does not require nursery schools to obtain evidence of immunization for attendance. Head Start has a mandate and dedicated staff who are required to assure that children in care are fully immunized. Except for nursery schools, ECELS immunization data did not show that Head Start programs differed significantly from the performance of other types of child care centers.

Levels of documented immunization in the 1993 sample collected by the licensing inspectors were higher than those observed for preschool children in the general population, but not as high as those reported by the Centers for Disease Control and Prevention for children in child care settings nationally. Discussions between the ECELS Director and the staff of the Immunization Division of the Centers for Disease Control revealed that the CDC reports the immunized status of children at two years of age. Except for Haemophilus influenzae type b vaccine (Hib), ECELS measured up-to-date immunization status at the age when the vaccine was due plus one month for every child, including infants. ECELS dose-counting also differed from the CDC approach by including as compliant those children who started immunization late and who were following the delayed-

immunization schedule. ECELS considered immunization against Hib by 20 months of age as evidence of compliance in 1990 and 1991. Now, DPW uses the same standard for Hib as for other vaccines (due-date plus one month).

Improved documentation of immunization was the result of activities both within and outside the project. The activities of ECELS were only one part of the national immunization campaign. ECELS featured immunization requirements for children and adults in many issues of the quarterly newsletter, Health Link. The PA AAP developed public service announcements featuring the wife of the Governor, and sent out large quantities of print materials via ECELS. The PA AAP also mailed materials to benefits managers in the corporate sector, and to many health professionals.

The Director of ECELS co-chaired an Immunization Task Force as part of her role as a member of the Governor's Commission for Children and Families. The immunization data collected by ECELS played a key role in the work of this task force, including support for PA Act 35, the legislation that mandated insurance coverage of vaccines in Pennsylvania. Immediately following passage of Act 35, ECELS sent posters to every child care provider to inform parents about the new resource.

Pennsylvania's child care licensing and management agency now includes immunization information in the parent brochure that will be distributed through the state's resource and referral agencies. This action was a direct result of the dissemination of the ECELS data. ECELS has become a primary source of health and safety consumer education in Pennsylvania.

Food Service Sanitation: The weighted Food Service Sanitation score shows compliance improved for the sample as a whole from 74% pretest to 86% posttest ($n = 67$, $p = 0.0002$). The association of improved food service sanitation with self-assessment is a valuable finding. In Pennsylvania, sanitarian inspections of child care facilities are rare. In 1991, 41% of 37 responding linked facilities and only 21% of 29 responding delayed-linked facilities reported that they had obtained written approval from an inspection by a sanitarian (item ES1015e).

Item ES4017 measured the use of a sanitary procedure to wash dishes and utensils. Reported compliance improved from 69% pretest to 87% posttest for the sample as a whole ($n = 45$, $p = 0.00781$). On this item, improvement could easily be attributed to self-assessment, since the correct procedure to be followed was described in the data collection instrument.

Item ES4021 checked that the same board is not used for raw and cooked foods. Reported compliance on this item improved from 19% pretest to 58% posttest ($n = 43$, $p = 0.01294$). Both linked and delayed-linked gained equally in this measure. However, the linked sites gained 19 percentage points in their reported compliance score on item ES4011, using only non-porous cutting boards, while the delayed-linked group did not gain at all ($p = 0.01284$).

Diapering/Toileting: For item ES4060, cleaning and sanitizing the diaper changing surface after each use, reported compliance for the sample as a whole improved from 75% pretest to 100% posttest ($n = 40$, $p = 0.00195$). In the posttest, for item ES4059a, the diaper changing table having an impervious surface, the reported compliance for the linked group was 92% ($n = 26$), and for the delayed-linked group only 45% ($n = 21$). Reported compliance with item ES4055, sanitary use of training chairs, increased from 33% pretest to 67% posttest, but the small sample of sites that used training chairs at all did not have sufficient power for statistical significance of this change.

Enrollment/Attendance/Symptom Records: ECELS collected data on attendance and symptoms for individual children in specific classrooms from 32 sites, including 110 classrooms between the beginning of 1990 and the end of 1991.

Dale Tavis, M.D., M.P.H., State Epidemiologist in the PA Department of Health conducted an analysis of a subset of the submitted data. These data show classroom variation within a site independent of age group, seasonal and age-specific trends that raise questions for future research.

4. Reduce practices leading to baby bottle mouth tooth decay: ECELS emphasized the hazard of putting feeding bottles in cribs or beds or allowing children to carry them around with them in the initial training of Health Advocates and Health Consultants, and in the ECELS newsletter. Reported compliance with appropriate bottle feeding practices (item DH4062) was only 56% at pretest and did not change at posttest. State regulations require that children are not allowed to sleep with bottles in their mouths. This regulation permits bottles in bed until a child is fully asleep and does not preclude prolonged bottle feeding in or out of bed. Inappropriate bottle feeding is a common practice because it soothes unhappy children. This practice is highly resistant to change by education alone.

5. Promote appropriate access to fluoride intake: During the study period, the Department of Health abruptly stopped distributing fluoride supplements to child care and eliminated all their dental health positions. Despite this

set-back, reported compliance improved for item DH2240, whether the facility knows that children receive fluoride either in their drinking water or in supplements given at home or in the program. Pretest compliance was only 10%, but by the posttest, reported compliance improved to 65% ($n = 49$, $p = 0.00000$). Both the linked and delayed-linked groups showed comparable gains. Achieving compliance required only advocating for children to receive fluoride, not necessarily giving it. Since 40% of Pennsylvania lacks fluoridation of drinking water, many children need attention paid to this issue.

6. Promote improved nutritional status of children in early childhood education programs by modifying inappropriate feeding practices and identifying children who are overweight or underweight: ECELS addressed this issue by measuring a) the adequacy of the foods served by the program and b) the extent to which child care centers had obtained growth data on children in their care. In both, compliance improved within the sample.

The weighted nutrition score improved from 65% in the pretest to 77% in the posttest ($n = 67$, $p = 0.0001$). Both the linked and delayed-linked facilities gained, suggesting that self-assessment played a role in educating them about desired practices. The only item showing differential

improvement for the linked facilities was N4064a. This item measured whether formula was brought to the program only in factory-sealed containers. Reported compliance improved for the linked sites from 17% pretest to 39% posttest while compliance for the delayed-linked sites decreased from 15% pretest to 8% posttest ($n = 31$, $p = 0.01480$)

Documentation of growth measurements was a part of the audit of the child health records. Documentation of height was checked in item RC3039 and of weight in item RC3038.

Facilities that were linked with Nurse-Consultants improved by 34 percentage points pretest to posttest while reported compliance of facilities without Nurse-Consultants decreased pretest to posttest by seven percentage points ($p = 0.00197$). A similar pattern of change was observed for documented height measurements.

7. Promote the use of opportunities to provide health education/physical fitness curricula for children, staff and parents in early childhood education programs: In the pretest instrument, respondents responded to an open-ended question about education and training activities at their facilities. In the posttest instrument the respondents coded specific topics and targets of planned health education activities. Because of differences in data collection pretest to posttest, only the posttest results

were tabulated. (See items TR2312a through TR2320d in Appendix C3, ECELS (1991) New Item Compliance.)

Overall, half to two-thirds of the sites reported providing parent education on most of the health topics. Exceptions were low levels of parent education in first aid for children (37%, n = 65) , caring for ill children (42%, n = 66); nutrition (42%, n = 64) and child abuse (35%, n = 65).

Staff and volunteer education showed the highest levels of compliance, generally above 75%. Exceptions were that 67% reported providing training in parent involvement (n = 66), and 72% reported providing nutrition training (n = 67).

Overall, reported health education activities for children were much lower than expected of a child development program. Only 49% of sites reported addressing preventing infection with the children (n = 66); only 55% taught preventing injury (n = 66), 14% taught first aid (n = 64), 52% taught nutrition (n = 66), and 25% taught preventing child abuse (n = 64).

ECELS fostered planned health education by including a suggested calendar of activities, offering appropriate support materials in each issue of Health Link, and encouraging use of telephone advice from ECELS. Many

facilities requested help from ECELS for answers to specific technical questions. Many facilities asked ECELS to arrange staff, child and parent education. By the end of the project period, ECELS was receiving approximately 300 telephone calls per month on the project's 800 and local numbers. Of these, more than half were requests for technical assistance. The others were requests for materials, including about 50 audio-visual loans per month. As shown in Table 4, these requests increased steadily from 1990 to 1993.

Table 4: ECELS Technical Assistance			
Type of Request	FY 1990	FY 1991	FY 1992
technical consultation	703	983	1,956
audiovisual materials	214	321	461
print material only	231	433	2,604

The staff of ECELS reviewed approximately 10 videos and print materials for each purchased for distribution. At the

end of the project period, the ECELS audiovisual library held multiple copies of 49 titles. The project maintained over 140 different print materials either developed by ECELS or purchased for single copy distribution from other sources.

At the end of the project period, the circulation of Health Link was 15,500 copies quarterly. Recipients of the newsletter included over 12,000 early childhood programs in Pennsylvania, health professionals willing to assist these programs, and policy makers whose work relates to early childhood education programs. The county agents of the Penn State Extension Service linked their resources with ECELS by gathering contact information for legally unregulated early childhood programs to whom ECELS sent Health Link also. Agencies within and outside Pennsylvania not eligible for free copies of Health Link could subscribe. A total of 104 individuals not otherwise eligible to receive Health Link subscribed.

In item FA2241, ECELS monitored first aid training of caregivers in the study sample. Pretest to posttest, facilities in the study reported a sharp drop in compliance with caregivers having completed a first aid course in the past three years (91% to 25%) ($n = 67$, $p = 0.00000$). To address this deficiency and the ongoing need for entry-level

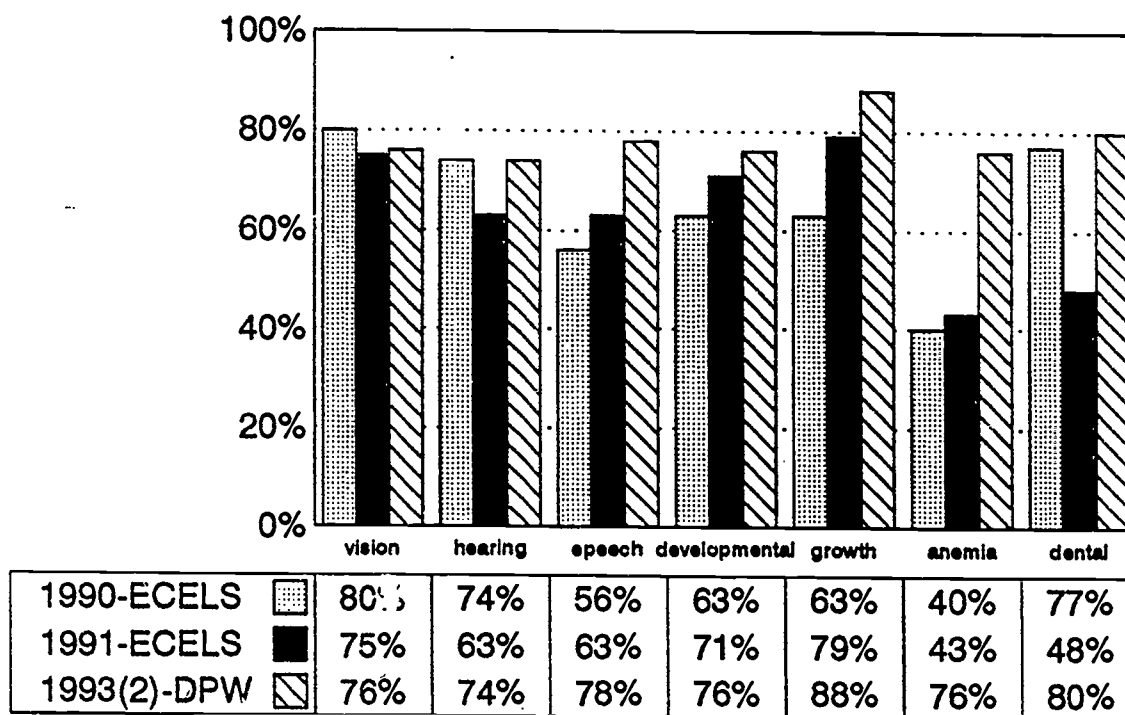
and continuing education of child care professionals, ECELS built the capacity of the American Red Cross (ARC) to deliver child care training in Pennsylvania.

In 1990, two factors restricted the use of the nationally endorsed ARC Child Care Course: lack of certified instructors and lack of financing to pay the cost of the course. ECELS arranged for training and certification of 108 new ARC Child Care Course Instructors. Certified instructors and early childhood program staff were linked by ECELS with local chapters of the ARC. Since 1990, ECELS arranged delivery of nearly 6,000 units (of three to 7.5 hours each) of ARC caregiver training statewide. The most popular (and most costly unit to deliver) in the ARC CCC is Infant and Child First Aid. This unit includes choke-saving and rescue breathing and requires 7.5 hours. The other six units require about three hours each. ECELS also helped Penn State University plan for delivery of the ARC Child Care Course for college credit.

ECELS provided training for early childhood educators with presentations at many conferences. The project provided consultation to 24 leaders from other states and the District of Columbia on implementation of aspects of ECELS. The presentations and publications of ECELS are listed in Appendix D.

8. Promote early and continuous age-appropriate, screening linked with follow-up for children with (health) problems: The data collected for documented screening tests for individual children in the sample are presented in Figure 2.

Figure 2: Children with Up-to-date Screening in Child Care Centers



1990 = 425 child records from 57 sites, 1991 = 424 child records from 57 sites (ECELS)
 1993(2) = 4,423 child records from 907 sites (DPW)
 (Facilities with data in matched pretest/posttest sample, Head Start sites excluded)

DPW adopted the surveillance techniques for immunization and other routine preventive services developed by ECELS as discussed under objective 3 above. Figure 2 summarizes the

individual record audits conducted by ECELS and compares the results with the data collected during the second quarter of 1993 as part of the licensing inspections. Little change was observed between 1990 and 1991. However, a trend for improvement can be seen in the data collected by DPW in the second quarter of 1993.

Gains in reported compliance with screening recommendations from the ECELS study sample to the more recently collected DPW sample are particularly striking for anemia and dental services. Many factors contributed to the trend for improved compliance with screening. ECELS data were used to advocate for increasing the Medicaid (EPSDT) fees and the passage of legislation providing health insurance for young uninsured children (Act 113). During the project period, EPSDT fees were increased and many more children began to be screened. PA Act 113 (health insurance for uninsured children) was enacted in April 1993, too late to have influenced these data.

9. Promoting reduction in preventable injuries in early childhood education programs: ECELS designed The Injury Report Form to help participating sites maintain surveillance. Although the form included a copy for ECELS, as previously indicated, few providers sent these to ECELS because they were concerned about exposure to liability

suits. However, providers requested thousands of copies of the form, suggesting that the document was being used at the program level. This observation was supported by the ECELS pretest/posttest data that showed a gain in reported compliance with maintenance of an injury log (item ES3140) from 48% in the pretest to 77% in the posttest ($n = 64$, $p = 0.00004$). Furthermore, reported compliance with review of injury records within the past six months (item ES2253) improved from 19% in the pretest to 79% in the posttest ($n = 63$, $p = 0.00000$). No difference in improvement was noted between the linked and delayed-linked sites for these items.

Providers also reported improved compliance with a documented site-self inspection within the past month, from 24% pretest to 47% posttest (item ES3136, $n = 58$, $p = 0.01916$).

In the weighted summary scores, the scores for general injury risk, falls, and poisoning all improved from pretest to posttest. The items contributing to these improvements are shown in Appendix C2. Reported compliance improved for safe slide ladders (linked sites), children not present when the exterminator applies chemicals (all sites), hot water temperature < 110 degrees (linked sites), and electrical outlets covered (all sites).

Transportation risks were addressed by collaboration between ECELS and another funded project of the PA AAP, The Traffic Injury Prevention Program (TIPP). TIPP gave ECELS bike helmet information and discount coupons to send to child care sites to address low compliance in this area (item T4231a). Low compliance with use of seat restraints on travel to and from child care (item T4241b) was addressed with publicity about PA restraint laws, and curricular activities for use at child care program sites.

Linked facilities reported higher compliance on item ES4059b, changing tables are sturdy, adult height and equipped with a railing (not an easily contaminated strap) to keep the child from falling. The reported compliance for the linked group was 85% ($n = 26$), and for the delayed-linked group 62% ($n = 21$).

Small Family Child Care Homes: Only 20 small family child care homes submitted matched data sets for 1990 and 1991. With limited resources for data analysis, a pretest/posttest analysis of the ECELS-FCCH data was not done for this report. However, ECELS used items with low compliance on the ECELS-FCCH instrument to target interventions. Items for which compliance was reported to be below 50% at posttest are listed in Appendix C4.

The Study Questions: As described under the objectives above, self-assessment and access to the basic services offered by ECELS led to many improvements in reported compliance with health and safety practices. Further, linkage with a Nurse-Consultant for a year did augment reported compliance associated with self-assessment and access to the basic services offered by ECELS.

Other Accomplishments: The American Academy of Pediatrics is intensively working to secure a medical home for every child. Child care facilities can be partners in solving access problems. In April, 1993, the ECELS Director led a mid-Atlantic regional conference on "Securing a Medical Home for Every Child." At the conference, the leaders of six states and the District of Columbia exchanged ideas and set state action plans to improve access to care for children. The Pennsylvania plan includes working with the data on immunization and screening services tracked by ECELS to target interventions.

Shortfalls and Problems: The evaluation component of the project was ambitious for the available resources. Except for the family child care homes, ECELS has no objective observations to confirm the data. The non-random assignment of the sites to the linked and delayed-linked groups confounded the results of the study of the impact of

the Nurse-Consultants. The attrition of the sample over the course of the study decreased the power of the study.

No data were collected on race or ethnicity of individuals served or trained. However, subjectively, the proportions of minority groups involved appeared to reflect their distribution in the populations served.

Building the capacity to deliver the ARC Child Care Course took much more effort than originally anticipated. The PA Association for the Education of Young Children advertised the availability of the training. ARC certified successful participants and rented the necessary equipment to ECELS. However, most of the work of arranging for the site, equipment, instructors and confirmation of attendance fell to ECELS. Scheduling was complicated by limited availability of equipment and personnel. A VCR and manikins are required to teach the Infant and Child First Aid Unit. For this popular unit, at least two instructors per session are usually required.

Overall, demand for the ARC training greatly exceeded the resources allocated to it. The actual cost for the Infant and Child First Aid unit is \$40/participant. ECELS used grant funds to train and pay the honorarium and expenses of instructors, buy manuals and supplies, and rent equipment.

These problems were overcome by subcontracting with the ARC chapters to deliver training and setting up computer (PARADOX) soft-ware to match instructors, training participants, ARC chapters and equipment. Although thousands of units of training have been delivered, a waiting list for training remains.

VI. PUBLICATIONS/PRODUCTS

JOURNAL ARTICLES (Copies are included in the Appendices)

Aronson, Susan "Immunization Dose Count Table." Young Children, 46(6):19, September, 1991.

Aronson, Susan "Promoting Children's Health and Safety Through Child Care" Child Care ActionNews, 8(6):1,6,7, November-December, 1991.

Aronson, Susan "Role of the Pediatrician in Setting and Using Standards for Child Care" Pediatrics 91:239-243, January 1993.

American Academy of Pediatrics, Early Childhood, Adoption and Dependent Care Committee "The Pediatrician's Role in Promoting the Health of Patients in Early Childhood Education and/or Child Care Programs" Pediatrics 92:489-492, September, 1993.

CONTRIBUTION TO BOOKS (Copy not included in the Appendix)

American Public Health Association, American Academy of Pediatrics. Caring for Our Children. National Health and Safety Performance Standards: Guidelines for Out-of-Home Child Care Programs. Washington, D.C.: American Public Health Association, American Academy of Pediatrics, 1992. Appendix G and many parts of the text are based on the work of ECELS. The participation by the Project Director of ECELS as a member of the Central Steering Committee and the editing committee for the standards provided many opportunities to incorporate concepts, approaches and materials from ECELS. Copies are available from the American Academy of Pediatrics, 141 Northwest Point Blvd., Elk Grove Village, IL 60009.

MANUALS/BOOKLETS/BROCHURES (Copies are included in the appendices)

Model Child Care Health Policies: a fill-in the blank set of health policies developed in response to the lack of health policies reported by participating child care programs (based on the 1992 AAP/APHA Standards for Out-of-Home Child Care). ECELS distributed the model health policies to facilities in Pennsylvania by ECELS using CCDBG funds. They are nationally distributed by the National Association for the Education of Young Children, 1509 16th Street, NW, Washington, DC 20036-1426.

Preparing for Illness This booklet for parents and providers was prepared by the Early Childhood Committee of the PA AAP with staff support from ECELS. Copies of the booklet were distributed in Pennsylvania to all regulated early childhood facilities by ECELS and nationally by Cigna Insurance company to Cigna Clients. This booklet is available from the National Association for the Education of Young Children. (See address for NAEYC above.)

Immunization Checking Curriculum A curriculum for training child care licensing staff how to assess immunization completeness using immunization dates and the child's birth date. Copies are available from the PA AAP at cost.

Health Consultant Training Curriculum A curriculum for training nurses on how to be health consultants for child care programs. The curriculum is based on the analogy of the problem-oriented approach to patient care where the child care program is viewed as the patient. Copies are available from the PA AAP at cost.

Powdered Formula for Babies on the Go A brochure instructing parents and caregivers about the use of powdered formula to improve sanitation and safety when infant formula is used outside the home. Copies will be available from the PA Department of Health, P.O. Box 90, Harrisburg, PA 17120.

NEWSLETTERS

Health Link 14 issues as of Summer, 1993. Back issues and disk copies (Ventura software) are available at cost from the PA AAP. Subscriptions for future issues are also available from the PA AAP.

DEVICE

Immunization Dose Counter A slide-rule type of device to aid in evaluating immunization completeness by counting doses of vaccine for age. (See attached.) Immunization Dose Counters are available from the American Academy of Pediatrics for the cost of mailing. (See AAP address above.) The Immunization Dose Counter was nationally distributed by the American Academy of Pediatrics and the National Association for the Education of Young Children. Nearly all of the original printing of 240,000 Immunization Dose Counters (under a grant from the MERCK Vaccine Division) are in the field.

VII. DISSEMINATION/UTILIZATION OF RESULTS

This report will be submitted to ERIC. As indicated elsewhere in this report, many organizations and publications are already disseminating and utilizing the work of ECELS. Currently, ECELS is working actively with staff in the states of New Jersey, North Carolina, and West Virginia on replication of ECELS. Substantive exchanges

have taken place with California, Arizona, Indiana, Ohio, Wisconsin, Washington, Maryland, Missouri, Texas, New Hampshire, Massachusetts, Virginia, and Oklahoma. Utah is attempting to implement the ARC training initiative. In collaboration with the Better Care for the Babies Project of Zero to Three, and the French-American Foundation the Director of ECELS shared materials and approaches in Florida, North Carolina, and Illinois. The American Public Health Association is also disseminating the findings in the project to implement Caring for Our Children. The National Governor's Association, The Child Care Action Campaign, and the US Department of Agriculture have publicized ECELS.

VIII. FUTURE PLANS/FOLLOW UP

From the outset, ECELS sought to secure the future of successful interventions. Commitments for collaboration within the state with support of the project after the demonstration period were included in the initial grant application. ECELS is now a part of the roster of state-funded quality improvement services for child care. The Child Care and Development Block Grant was only a political aspiration when the project began, but has become the primary funding source for ECELS. Some Title V Maternal and Child Health Block Grant funds are being combined with CCDBG funds to work on inclusion of children with special health needs in all types of early childhood facilities.

ECELS is providing consultation for replication of the project by other states. The Director of ECELS was a consultant at two meetings of key leaders in New Jersey. The New Jersey leaders have planned a third to formulate next steps. These meetings were organized by a state-wide coalition of child care and health leaders with input from the director of ECELS. North Carolina held the second of two leadership meetings supported by consultation from the Director of ECELS. West Virginia has a pediatrician who is working with their state extension service to implement ECELS with support from the project staff.

Internationally, ECELS instruments are being evaluated for possible use to improve environmental safety and health in French child care programs. Materials produced by ECELS have been shared with Ukrainian pediatricians who work with Detsky Sad (child care) in that country.

X. TYPE/AMOUNT OF SUPPORT AND RESOURCES NEEDED TO REPLICATE

The budget for ECELS determines the scope of services that can be offered. At the present time, the work of ECELS is sustained by a budget of \$350,000 from the PA Department of Welfare and \$60,000 from the PA Department of Health.

During 1992-93, an additional \$300,000 was used to fund direct training and distribution of materials to child care sites across the state. A \$10,000 grant from the

Pittsburgh-based Jewish Health Care Foundation for development of lead poisoning education materials for child care providers has been approved.

Present staffing of ECELS consists of a part-time pediatrician director, a masters-level educated nurse who coordinates the program on a day-to-day basis, a part-time nurse who coordinates training and technical assistance, 2 secretaries and intermittent support from nurse consultants in the field who work on special projects. Additional staff are hired on a per diem basis to achieve training objectives and to develop new initiatives to assist child care providers with inclusion of children with special health care needs and education around prevention of lead poisoning.

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Appendix A - Membership on ECELS Advisory Committee

Early Childhood Professionals:

state child care center agency organization
state family child care home provider organization
private-for-profit child care center organization
state affiliate of NAEYC
state Head Start Association administrators
Head Start health coordinators

Health Professionals: (state organizations designated representatives where they exist)

state chapter of the American Academy of Pediatrics
(committees on early childhood, children with special needs)
state chapter of the American Academy of Family Practice
pediatric dentists
dental hygienists
community health nurses (public health)
visiting nurses associations
pediatric nurse practitioners (NAPNAP)
school nurses
nursing school faculty
state chapter of the infection control nurses
nutritionists
sanitarians/environmental health specialists
mental health professionals (child psychiatrists,
psychologists)
state chapter of the American Public Health Association
optometrists
health educators
state extension service
community health agencies
(community health centers, American Red Cross, Blue
Cross/Shield, state EPSDT administrator)

State Government:

health (Title V, state-county-municipal public health
administrators)
early childhood education
mental health and mental retardation
child care licensing
child care/early childhood funding agency (Title XX, IVA,
CDBG)
Governor's Special Advisor for Child Care
Head Start state collaboration coordinator
Child Care Food Program administrator
WIC agency administrator
key legislators

Federal Government:

Regional Public Health Nurse Consultant, Regional Office of
HHS, MCHB

Regional Nutrition Coordinator, Regional Office of HHS, MCHB

Parent Groups:

Head Start parents

Parent representatives on Governor's Commission for Children
and Families

Others as topics and focus of problem solving suggest.

APPENDIX B1
Instruments
Quarterly Activity Reports

Site ID # _____

PA CHAPTER, AMERICAN ACADEMY OF PEDIATRICS
Early Childhood Education Linkage System
HEALTH ADVOCATE'S QUARTERLY ACTIVITY REPORT

DATES: Period Covered is from _____ to _____

SITE: Name _____ Phone at Site: _____

Address of Site: _____

Has the program changed in any way at this site during this quarter? (circle) YES NO
 IF, YES, PLEASE EXPLAIN HOW THE PROGRAM CHANGED ON THE BACK OF THIS FORM.

ADMINISTRATOR: Name _____ Phone: _____

HEALTH ADVOCATE: Name _____ Phone: _____

CHILDREN: Site's Licensed/Registered Capacity: _____ (# of children)

Average Enrollment: _____ (#) Average Attendance: _____ (#)

Served in Each Age Range: # With Disabilities (by age):

BIRTH-18 Months	_____	_____
19-36 Months	_____	_____
37-60 Months	_____	_____
61 + Months	_____	_____

ATTACH ATTENDANCE RECORD AND ANY INJURY REPORTS MADE DURING THIS QUARTER.
 (INCLUDE NOTATIONS OF ILLNESSES CHILDREN HAD ON THE ATTENDANCE RECORD.)

NAME OF HEALTH CONSULTANT: _____

Type of Encounter	Estimated # of Times	Estimated Hours Spent This Quarter on This Activity
A. On-site meetings about health	_____	_____
B. Phone contact with health consultant	_____	_____
C. Contacts with other health professionals	_____	_____
D. Set-up or giving health education	_____	_____
E. Phone to ECELS	_____	_____
F. Other (describe on the back of this form)	_____	_____

RELATIONSHIP WITH HEALTH CONSULTANT: How do you feel it is going? (circle code and give details on the back of this form)

1 = Terrific, Great 2 = So-so, Could be better 3 = Awful, It isn't working

Signature of the Person Completing this form _____

PLEASE RETURN THIS FORM PROMPTLY TO: ECELS, PA AAP, The Dayton Building, Suite 220,
 610 Old Lancaster Rd., Bryn Mawr, PA 19010.

IF YOU NEED ANY HELP FROM ECELS: CALL 1-800-24-ECELS OR 215-520-9123

ctwplacate/health/frm 2/4/00

Site ID # _____

PA CHAPTER, AMERICAN ACADEMY OF PEDIATRICS
Early Childhood Education Linkage System

HEALTH CONSULTANT'S QUARTERLY ACTIVITY REPORT

DATES: Period Covered is from _____ to _____

HEALTH CONSULTANT:

Name: _____ Phone: _____

EARLY CHILDHOOD EDUCATION SITE RECEIVING CONSULTATION:

Name of Program/Facility/Site: _____

(use separate copies of the report form for each site where you provide consultation)

Name of Contact Person at Site: _____

Phone at Site: _____ Address of Site: _____

DIFFICULTIES:

Have you experienced difficulty in providing consultation to this early childhood education program?
(circle)

Yes No (If, Yes, please explain what difficulties you experienced on the back of this form.)

ENCOUNTERS FOR THIS SITE	Estimated # of Times	Estimated # Hours Spent This Quarter on This Activity
A. On-site meetings with staff about health	_____	_____
B. Phone/mail contact with child care program	_____	_____
C. Contacts with other health professionals	_____	_____
D. Set-up or giving health education	_____	_____
E. Phone to ECELS for advice or material	_____	_____
F. Contact with back-up physician	_____	_____
G. Other (describe on the back of this form)	_____	_____

RELATIONSHIP WITH EARLY CHILDHOOD PROGRAMS: How do you feel it is going? (circle code and give details on the back of this form)

1 = Terrific, Excellent. 2 = So-so, Fair. 3 = Awful, Poor, Not Working.

Signature of the Person Completing this form

PLEASE RETURN THIS FORM PROMPTLY TO: ECELS, PA AAP, The Dayton Building, Suite 220,
610 Old Lancaster Rd., Bryn Mawr, PA 19010.

IF YOU NEED ANY HELP FROM ECELS: CALL 1-800-24-ECELS OR 215-520-9125

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APPENDIX B2
Instruments
Injury Report Form

APPENDIX B3

Instruments

Enrollment/Attendance/Symptom Record

Month 19[illegible]**Total Placed on Register:**

Number of day facility was open:

Symptom Codes:

i = Asthma, wheezing

2 = Behavior change with no other symptom
h, runny nose, earache, sore throat, pink eye

3 = Diarrhea
8 = Stomachache

4 = Fever
9 = Urine problem

5 = Headache
10 = Vomiting

6 = Rash
11 = Other
(specify on back)

APPENDIX B4

Instruments

ECELS-C

APPENDIX B5

Instruments

ECELS-FCCH

APPENDIX C1
Data Tables
Weighted Risk Area Scores

ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data

Weighted Risk Area Scores										
# Items in score	n	Description of Score	'90 % of maximum possible score	'91 % of maximum possible score	p1 <.05 T Test	Linked 38 sites		Delayed - Linked 29 sites		p2 <.05 T TEST
						'90 %	'91 %	'90 %	'91 %	

Risk Area: INJURIES

34	67	General	75.29	82.11	0.0003	76.18	80.98	74.23	83.57	NS
10	67	Falls	69.66	75.12	0.0081	63.21	75.03	57.31	75.22	NS
3	67	Choking	64.18	69.80	NS	64.47	72.37	63.79	65.67	NS
10	67	Poisoning	77.08	83.13	0.0329	77.89	82.84	76.01	83.60	NS
8	67	Fires and Burns	91.44	93.23	NS	91.03	92.19	91.96	94.59	NS
47	67	Emergency Preparedness	74.42	75.37	NS	75.79	76.42	72.63	73.98	NS
11	67	Transportation	57.28	61.91	NS	63.30	61.51	49.44	62.43	0.0132

Risk Area: INFECTIOUS DISEASE

6	67	Immunization	65.92	66.67	NS	61.84	67.54	71.26	65.52	NS
16	67	General Sanitation	84.05	85.64	NS	85.23	85.28	82.50	86.12	NS
28	67	Food Service Sanitation	74.12	85.64	0.0002	74.67	86.59	73.41	84.28	NS
12	67	Diapering/Toileting	85.99	89.95	NS	88.86	90.22	84.53	89.59	NS

ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data									
Weighted Risk Area Scores									
# Items in score	n	Description of Score	'90 % of maximum possible score	'91 % of maximum possible score	p1 <.05	Linked 38 sites	Delayed - Linked 29 sites	p2 <.05	T Test
Risk Area: Health Promotion									
18	67	Documentation of Routine Health Supervision Services	53.18	57.03	NS	51.25	53.72	53.93	NS
30	67	Child Development, Sexual Abuse Prevention, Parent Involvement	84.11	87.24	0.0181	84.92	83.08	95.02	0.0089
26	67	Nutrition	64.73	77.18	0.0001	66.76	62.36	75.26	NS
4	67	Dental Health	37.93	51.27	0.0001	40.14	35.03	51.23	NS
12	67	Staff Health	79.29	76.51	NS	69.09	71.86	72.23	NS
57	67	Written Health Policies	9.17	14.97	0.0271	8.28	10.34	10.34	0.0356

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APPENDIX C2

Data Tables

ECELS Pretest and Posttest Compliance

ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data									
Risk Area: INJURIES - General									
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign <.05	delta L	delta DL	pMcNemar <.05	
CD4001a	64	Space indoors, is > 40 sq. ft. per child, wall-to-wall (H)	50.00	56.25	NS	0.00	0.14	NS	
CD4001b	64	Staff/child ratio indoors meets PA regulation of 1:1.4; T=1:5; PS=1:10; SA=1:12 (H)	76.56	75.00	NS	0.00	-0.03	NS	
CD4215a	57	Staff/child ratio outdoors meets PA regulation (see CD4001b) (H)	73.62	80.70	NS	-0.03	0.22	NS	
ES4046	67	Toilets located close proximity (M)	91.05	94.03	NS	0.03	0.03	NS	
ES4047	65	Toddlers accompanied to toilet (H)	75.39	83.08	NS	0.03	0.14	NS	
ES4048	61	Toilet doors can be opened by an adult in emergency (H)	88.53	96.72	NS	0.09	0.08	NS	
ES4049	67	Toilets suitable for independent use (M)	89.55	95.52	NS	0.05	0.07	NS	
ES4105	32	Broken toys inaccessible (M)	90.63	93.75	NS	0.00	0.08	NS	
ES4106	66	Indoor play equipment free of crush points (H)	86.36	98.49	NS	0.16	0.07	NS	
ES4109	39	No rough/slippery/sharp hazards (H)	100.00	94.87	NS	-0.05	-0.05	NS	
ES4186	41	Barriers to hazardous areas (H)	90.24	90.24	NS	-0.09	0.11	NS	
ES4121	58	Doors with locks can be opened by an adult (M)	94.83	94.83	NS	0.03	-0.04	NS	
ES4202	29	Fans have covers/guards (M)	89.66	86.21	NS	-0.07	0.00	NS	
CD4213	55	Outdoor play within 1/2 mile of center (M)	96.36	96.36	NS	-0.03	0.05	NS	

ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data								
Risk Area: INJURIES - General								
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign <.05	delta L	delta DL	pMcNemar <.05
ES4216	55	Playground equipment free of sharp edges, rusty, or protruding parts (H)	89.09	90.90	NS	0.03	0.00	NS
ES4217	48	Playground equipment securely anchored (M)	93.75	91.67	NS	-0.03	0.00	--
ES4218	47	Playground exposed screws and bolts capped (M)	78.72	87.23	NS	0.19	-0.05	NS
ES4219	56	Playground has no open "S" hooks (M)	80.36	82.14	NS	0.03	0.00	NS
ES4220	55	Playground has no head entrapment rings or holes (H)	98.18	90.90	NS	-0.12	0.00	NS
ES4221	53	Playground has no pinch or crush points (M)	90.57	94.34	NS	0.08	0.00	NS
ES4222	25	Playground has any broken equipment inaccessible (H)	40.00	60.00	NS	0.18	0.25	NS
ES4223	36	Any swing seats on playground are lightweight, flexible, non-cutting (H)	94.44	94.44	NS	0.00	0.00	--
ES4224	41	Slides on playground have flat (not tubular) steps (H)	82.93	87.81	NS	0.22	-0.17	0.01528
ES4227	56	No broken glass, sharp protrusions on playground(H)	91.07	94.64	NS	0.00	0.08	NS
ES4228	54	Outdoor play free of ditches, wells, heavy street traffic, other hazards (H)	98.15	77.78	0.00342	-0.21	-0.19	NS
ES4229	3	Swimming pools fenced with locked gate (H)	100.00	100.00	--	0.00	0.00	--

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ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data								
Risk Area: INJURIES - General								
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign <.05	delta L	delta DL	pMcNemar <.05
ES2253	63	Injury records last reviewed within 6 months (M)	19.05	79.37	0.00000	0.58	0.63	NS
ES3140	64	A file or injury log is kept (M)	48.44	76.56	0.00004	0.28	0.29	NS
A2103	66	Someone responsible for reviewing injury records (H)	75.76	90.91	0.04139	0.13	0.17	NS
ES3136	58	Date recorded for most recent site self-inspection within 1 month (M)	24.14	46.55	0.01916	0.32	0.08	NS
ES3137	33	Hazards found at self-inspection noted (H)	69.70	84.85	NS	0.19	0.08	NS
ES3138	32	Hazards corrected at self-inspection noted (H)	59.38	81.25	NS	0.24	0.18	NS
A2104	67	Someone responsible for doing self-inspection of facility (M)	88.06	94.03	NS	0.05	0.07	NS
ES3138a	28	Name of person doing self-inspection noted on record (L)	71.43	85.71	NS	0.12	0.18	NS

(For pcom90/91 and n of linked and delayed-linked, find item alphabetically in "Listing for Rocky Feuer"

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ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data									
Risk Area: INJURIES - Falls									
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign < .05	delta L	delta DL	pMcNemar < .05	
ES4225	43	Playground surfacing under and to 4 feet around elevated equipment is USCPSC recommended cushioning material (H)	53.49	69.77	NS	0.09	0.24	NS	
ES4107	31	Indoor climbers mounted over cushioning surface (H)	74.19	51.61	0.03906	-0.14	-0.29	NS	
ES4108	31	Indoor slide ladders have flat steps and side guards (H)	77.42	74.19	NS	0.00	-0.06	NS	
ES4181	48	Stairwells free of stored items (H)	100.00	95.83	NS	-0.04	-0.05	NS	
ES4182	49	Stairwells well lit by artificial or natural light (H)	100.00	93.88	NS	-0.03	-0.10	NS	
ES4183	39	Stairs used by children have child-height right hand descending handrail (H)	61.54	76.92	NS	0.09	0.25	NS	
ES4184	28	Landing or gate placed beyond doors that open into a stairway (H)	85.71	85.71	NS	-0.05	0.11	NS	
ES4185	30	All stairwells, elevated walks/porches/play areas have railings to prevent falls (H)	90.00	86.67	NS	-0.11	0.09	NS	
ES4120	39	Windows adjusted to keep opening < 6 inches (H)	92.31	82.05	NS	-0.12	-0.07	NS	
ES4215b	60	Playground surface free of trip hazards (H)	80.00	80.00	NS	-0.11	0.16	NS	

(For pcom90/91 and n of linked and delayed-linked, find item alphabetically in "Listing for Rocky Feuer"

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ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data									
Risk Area: INJURIES - CHOKING (See also Emergency Preparedness)									
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign <.05	delta L	delta DL	pMcNemar <.05	
ES4111	50	Objects < 1.25 inches diameter inaccessible to infants and toddlers (H)	98.00	96.00	NS	-0.04	0.00	NS	
DH4062 ES4062	32	No feeding bottles in cribs (H)	56.25	56.25	NS	-0.10	0.17	NS	
ES4110	53	Loose plastic bags (other than trash can liners) and styrofoam objects inaccessible to children who mouth objects (H)	98.11	100.00	NS	0.03	0.00	NS	

(For pcom90/91 and n of linked and delayed-linked, find item alphabetically in "Listing for Rocky Feuer")

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ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data									
Risk Area: INJURIES - Poisoning									
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign <.05	delta L	delta DL	pMcNemar <.05	
ES4032	56	Insecticides and cleaning supplies inaccessible to children (H)	92.86	98.21	NS	0.06	0.05	NS	
ES4165	52	Plants are known to be non-toxic (H)	84.62	90.39	NS	0.13	-0.05	NS	
ES4104	66	Toys free of peeling paint (H)	96.97	96.97	NS	0.00	0.00		
ES4197	65	Room surfaces free of peeling paint (H)	80.00	84.62	NS	-0.06	0.17	NS	
ES4112	61	Toxic materials in original container and inaccessible to children (H)	95.08	96.72	NS	0.03	0.00	NS	
ES4114	46	Medications inaccessible, in original containers, labeled by pharmacy or manufacturer, with safety closure (H)	95.65	95.65	NS	0.00	0.00	--	
ES2263	48	Pesticides applied to surfaces used by children or in contact with food (H)	79.17	85.42	NS	0.10	0.00	NS	
ES2265	40	Children are not present when exterminator applies chemicals (H)	67.50	92.50	0.00195	0.07	0.38	NS	
ES2264	57	Chemicals used to control pests are known and approved for use in child care (H)	15.79	15.79	NS	0.03	-0.05	NS	
ES4186	41	Safeguards present to keep children out of hazardous areas (H)	90.24	90.24	NS	-0.09	0.11	NS	

(For pcom90/91 and n of linked and delayed-linked, find item alphabetically in "Listing for Rocky Feuer")

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ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data									
Risk Area: INJURIES - Fire and Burns (See also Emergency Preparedness)									
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign <.05	delta L	delta DL	pMcNemar <.05	
ES4044	62	Hot water temperature <110 degrees F. (H)	80.65	85.48	NS	0.15	-0.07	0.04673	
ES4115	40	Heaters, pipes, radiators >110 degrees F. Inaccessible to children (H)	92.50	92.50	NS	-0.04	0.06	NS	
ES4170	60	Free-standing space heaters not used (H)	78.33	86.67	NS	0.06	0.12	NS	
ES4118	59	Electric cords/equipment inaccessible to children (H)	89.83	94.92	NS	0.03	0.08	NS	
ES4119	64	Electric outlets covered (H)	84.38	95.31	0.01563	0.06	0.17	NS	
ES4194	63	Evidence of smoking observed (H)	88.89	82.54	NS	-0.03	-0.11	NS	
ES4199	64	Art work covers >20% of walls (M)	82.81	81.25	NS	-0.06	0.03	NS	
ES4201	67	Facility free of loose or frayed wiring (H)	98.51	95.52	NS	-0.05	0.00	NS	

(For pcom90/91 and n of linked and delayed-linked, find item alphabetically in "Listing for Rocky Feuer"

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ECLS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data									
Risk Area: Emergency Preparedness									
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign < .05	delta L	delta DL	pMcNemar < .05	
FA2241	67	Caregivers had first aid training in past 3 years (H)	91.05	25.37	0.00000	-0.63	-0.69	NS	
T2282	32	Drivers received first aid training (H)	75.00	46.88	0.03516	-0.22	-0.36	NS	
ES3055	17	Record of at least one staff member with advanced life-saving where activities include swimming (H)	47.06	76.47	NS	0.22	0.38	NS	
EE3130	64	Most recent fire drill held not > 1 month ago (H)	39.06	45.31	NS	0.03	0.10	NS	
EE3131	58	Evacuation drill ever 7 am to 10:59 am (H)	67.24	68.97	NS	-0.06	0.11	NS	
EE3132	59	Evacuation drill ever 11 am to 1:59 pm (H)	62.71	66.10	NS	0.00	0.08	NS	
EE3133	54	Evacuation drill ever 2 pm to 6 pm (H)	46.30	55.56	NS	0.03	0.17	NS	
EE3134	9	Evacuation drill ever 7 pm to 6:59 am (H)	11.11	0.00	NS	0.00	-0.14	NS	
EE3135	62	Took < 2 minutes to exit at last drill(H)	40.32	48.39	NS	0.09	0.07	NS	
ES4171	63	Evacuation procedure conspicuously posted (H)	31.75	49.21	0.03469	0.17	0.18	NS	
EE4172	56	Smoke alarm conspicuous and functional (H)	94.64	94.64	NS	0.00	0.00	NS	
EE4173	49	Emergency lights go on when tested	89.80	83.67	NS	-0.04	-0.04	NS	

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ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data

Risk Area: Emergency Preparedness

Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign < .05	delta L	delta DL	pMcNemar < .05
EE4173a	63	Address visible from street for emergency vehicles (M)	60.32	65.08	NS	0.03	0.07	NS
EE4175	67	Exit routes clearly marked (H)	88.06	88.08	NS	0.00	-0.07	NS
EE4176	65	Exits bypass kitchen, boiler room (H)	90.77	80.00	NS	-0.08	-0.14	NS
EE4177	66	Exits routes unobstructed (H)	98.49	93.94	NS	0.03	-0.14	0.01739
EE4178	67	Doors swing in direction of exit (H)	88.06	89.55	NS	-0.03	0.07	NS
EE4179	67	Exit doors unlock easily from inside (H)	89.55	94.03	NS	0.05	0.03	NS
ES4181	48	Stairwells free of stored items (H)	100.00	95.83	NS	-0.04	-0.05	NS
ES4182	49	Stairwells well lit (H)	100.00	93.88	NS	-0.03	-0.10	NS
EE4188	67	Phone with outside line accessible to staff in an emergency (H)	95.52	95.52	NS	0.03	-0.03	NS
EE4189	67	Emergency phone numbers posted (M)	92.54	95.52	NS	0.03	0.03	NS
CD4213a	19	Phone accessible to playground (H)	73.68	78.94	NS	0.00	0.17	NS
FA4130	67	First aid kit in each child care area (H)	85.08	94.03	NS	0.11	0.07	NS
FA4131	8	At least one first aid kit in facility (H)	100.00	100.00		0.00	0.00	
FA4141	64	First aid kit taken on trips (H)	89.06	96.88	NS	0.03	0.15	NS
T4237	28	Vehicle equipped with first aid kit (H)	92.85	92.85	NS	0.06	-0.10	NS

ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data									
Risk Area: Emergency Preparedness									
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign <.05	delta L	delta DL	pMcNemar <.05	
FA4132	66	Gauze pads in first aid kit (L)	95.46	96.97	NS	0.00	0.04	NS	
FA4133	65	Tweezers in first aid kit (L)	92.31	90.77	NS	-0.03	0.00	NS	
FA4134	65	Adhesive tape in first aid kit (L)	95.39	98.46	NS	0.00	0.07	NS	
FA4135	66	Adhesive bandages in first aid kit (L)	95.46	96.97	NS	0.00	0.04	NS	
FA4136	64	Some type of soap in first aid kit (L)	71.88	96.88	0.00014	0.39	0.71	0.00310	
FA4137	66	Syrup of Ipecac in first aid kit (H)	31.81	45.46	NS	0.13	0.14	NS	
FA4138	66	Scissors in first aid kit (L)	93.94	92.42	NS	0.03	-0.07	NS	
FA4139	64	First aid instructions available (H)	70.31	73.44	NS	0.06	0.00	NS	
EE3157	65	Emergency contact information for children accessible (H)	92.31	100.00	NS	0.08	0.07	NS	
EE3159	66	Emergency contact information available for every child in care (H)	48.49	87.88	0.00001	0.29	0.54	NS	
EE3161	67	Home and work phone numbers to reach parents (H)	92.54	97.02	NS	0.03	0.07	NS	
EE3162	67	Name and phone number of alternate person if parent not reachable (H)	85.08	91.05	NS	0.11	0.00	NS	
EE3164	67	Consent for transport for emergency medical care (H)	80.60	77.61	NS	-0.03	-0.03	NS	

ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data								
Risk Area: Emergency Preparedness								
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign <.05	delta L	delta DL	pMcNemar <.05
EE3165	67	Name and phone # of child's usual source of health care (H)	83.58	86.57	NS	0.11	-0.07	NS
EE3166	67	Child's type of health insurance listed (M)	67.16	61.20	NS	0.05	0.21	NS
EE2243	67	Emergency contact information for children verified within past 6 months (H)	79.10	79.10	NS	-0.03	0.03	NS
EE2245	64	Emergency contact information for children taken on trips (H)	84.38	95.31	0.03906	0.08	0.14	NS
EE2246	58	Emergency contact information accessible when children are transported (H)	84.48	98.27	0.00781	0.11	0.18	NS
EE2167	63	Next of kin recorded for staff (M)	52.38	74.60	0.00661	0.20	0.25	NS
EE3171	63	Health insurance noted for staff (M)	31.75	49.21	0.03469	0.17	0.18	NS

(For pcom90/91 and n of linked and delayed-linked, find item alphabetically in "Listing for Rocky Feuer")

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EOELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data									
Risk Area: INJURIES - Transportation									
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign <.05	delta L	delta DL	pMcNemar <.05	
T4231	25	Children protected from street traffic while riding bicycles/tricycles (H)	100.00	100.00	--	0.00	0.00	--	
T4231a	9	Children riding bikes wearing helmets (H)	0.00	11.11	--	0.17	0.00	NS	
T4232	54	Children protected from traffic at drop-off and pick-up points (H)	94.44	94.44	NS	-0.14	0.12	NS	
T4235	27	Vehicles equipped with operable restraints for facilities that transport children (H)	100.00	92.59	NS	-0.12	0.00	NS	
T4240	27	Mechanism to prevent children from opening door while moving in vehicles operated by facility (H)	81.48	81.48	NS	0.00	0.00	--	
T4241b	30	All children and adults use seat restraints arriving and leaving facility (H)	46.67	40.00	NS	-0.16	0.09	NS	
T2278	37	Each child wears age appropriate seat restraint when transported by facility (H)	91.89	91.89	NS	-0.05	0.06	NS	
T2281	32	Facility's drivers have received training for transporting children in past 4 years (H)	40.63	40.63	NS	-0.06	0.07	NS	
T2282	32	Facility's drivers have first aid training (H)	75.00	46.88	0.03516	-0.22	-0.36	NS	
T4237	28	Facility's vehicles equipped with first aid kit (H)	92.86	92.86	NS	0.06	-0.10	NS	
T4239	27	Facility's vehicles have current inspection sticker (M)	100.00	100.00	--	0.00	0.00	--	

(For pcom90/91 and n of linked and delayed-linked, find item alphabetically in "Listing for Rocky Feuer")

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ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data									
Risk Area: INFECTIOUS DISEASE - Immunization									
Item # '90/'91	n	Item Description (All have weight: H = greatest risk)	pcom90	pcom91	psign <.05	delta L	delta DL	pMcNemar <.05	
For randomly selected 8 records, at least 80% showed up-to-date immunization for:									
RC3049	67	Diphtheria-Tetanus-Pertussis (DTP) vaccine	77.61	50.75	0.00210	-0.26	-0.27	NS	
RC3050	67	Polio vaccine	77.61	65.67	NS	-0.05	-0.21	NS	
RC3051	67	Measles vaccine	70.15	76.12	NS	0.11	0.00	NS	
RC3052	67	Haemophilus influenzae type b vaccine (Hib)	38.81	61.20	0.00592	0.29	0.14	NS	
RC3053	67	Mumps	65.67	71.64	NS	0.11	0.00	NS	
RC3054	67	Rubella	65.67	74.63	NS	0.16	0.00	NS	

(For pcom90/91 and n of linked and delayed-linked, find item alphabetically in "Listing for Rocky Feuer" c:\wp51\ecels\tables\immuncom.tbl 9/16/93

ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data								
Risk Area: INFECTIOUS DISEASE - General Sanitation								
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign <.05	delta L	delta DL	pMcNemar <.05
ES4070 ES4055a	61	All children wash their hands after toileting, with help if necessary (H)	83.61	85.25	NS	-0.03	0.08	NS
ES4070 ES4070a	62	All children wash their hands before eating, with help if necessary (H)	83.87	93.55	NS	0.11	0.08	NS
ES4157 ES4157a	47	Staff wash hands after diapering or helping children with toileting (H)	95.75	91.49	NS	0.00	-0.11	NS
ES4160	64	Staff wash hands before handling food (H)	92.19	81.25	NS	-0.8	-0.14	NS
ES4159	62	Staff wash hands after contact with secretions from nose or mouth (H)	80.64	75.81	NS	-0.03	-0.07	NS
CD4001a	64	Space per child, indoors, is > 40 sq. ft. per child wall-to-wall (M)	50.00	56.25	NS	0.00	0.14	NS
ES4128	52	Space between sleeping children is = or > 3 feet (M)	67.31	82.69	NS	0.17	0.14	NS
CD4001b	64	Staff/child ratio indoors meets PA regulation for I=1:4; T=1:5, PS=1:10; SA+1:12 (M)	76.56	75.00	NS	0.00	-0.03	NS
ES4155 DH4155	36	Toothbrushes are stored so they do not touch each other and can air dry (H)	77.78	88.89	NS	0.05	0.17	NS
ES4042	63	Only single-use disposable towels available (H)	95.24	95.24	NS	0.08	0.05	NS
ES4043	67	Liquid soap is available at each sink (H)	65.87	85.08	0.00443	0.16	0.24	NS
ES4045	64	Toilets separate from food/play/sleep (H)	95.31	95.88	NS	0.00	0.03	NS

ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data									
Risk Area: INFECTIOUS DISEASE - General Sanitation									
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign < .05	delta L	delta DL	pMcNemar < .05	
ES4196	66	Floors, coverings, walls, ceilings clean (M)	90.91	92.42	NS	0.00	0.03	NS	
ES4126	52	Rest equipment has user's name on it (M)	94.23	96.15	NS	-0.03	0.09	NS	
FA4151	62	First aid kits clean (M)	96.77	98.39	NS	0.00	0.04	NS	
A2077	66	Staff assigned to maintenance tasks (M)	89.39	93.94	NS	-0.03	0.14	NS	

(For pcom90/91 and n of linked and delayed-linked, find item alphabetically in "Listing for Rocky Feuer")

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ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data

Risk Area: INFECTIOUS DISEASE - Food Service Sanitation

Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign <.05	delta L	delta DL	pMcNemar <.05
ES4005	53	Each refrigerator has thermometer within 12 inches of door (H)	56.60	81.13	0.00098	0.34	0.10	0.04724
ES4006	53	Measured temperature of refrigerator < 45 degrees F. (H)	45.28	83.02	0.00001	0.44	0.29	NS
ES4007	48	Each freezer has thermometer located within 12 inches of door (H)	47.92	64.58	0.03857	0.22	0.10	NS
ES4008	50	Measured temperature of freezer < 0 degrees F. (H)	28.00	74.00	0.00000	0.55	0.33	NS
ES4014	37	Perishable food brought from home kept refrigerated (H)	86.49	89.19	NS	0.05	0.00	NS
ES4190	57	Window and doors screened against insects (H)	68.42	75.44	NS	0.03	0.12	NS
ES4028	55	Open packages stored in pest-resistant containers (H)	43.64	67.27	0.01916	0.25	0.22	NS
ES4029	51	Continuous inventory (noting stock, age and rotation of food) maintained in food storage area (L)	33.33	49.02	NS	0.19	0.10	NS
ES4030	52	Food storage area well lit (L)	96.23	94.23	NS	0.03	-0.10	NS
ES4031	54	Food storage area free of cleaning equipment (M)	87.04	96.30	NS	0.03	0.18	NS
ES4026	56	All food stored on shelves (H)	94.64	94.64	NS	-.03	.05	NS
ES4018	49	Food service staff wear hair restraints (M)	75.51	79.59	NS	0.03	0.05	NS

ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data

Risk Area: INFECTIOUS DISEASE - Food Service Sanitation

Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign <.05	delta L	delta DL	pMcNemar <.05
ES4019	42	Food service staff have open sores or are wearing bandages without gloves on their hands (H)	100.00	97.62	NS	0.00	-0.06	NS
ES4015	57	Food preparers do not wash hands in same sink used for food preparation (H)	68.42	78.95	NS	0.06	0.19	NS
ES4010	46	Range and counter surfaces clean (H)	93.48	93.48	NS	0.03	-0.06	NS
ES4020	49	Fresh fruits and vegetables are washed (H)	97.96	100.00	NS	0.03	0.00	NS
ES4069	34	Serving surfaces for food cleaned or covered with mats or cloths	97.06	88.24	NS	-0.14	0.00	NS
ES4011	43	Only non-porous cutting boards used (H)	79.07	90.70	NS	0.19	0.00	0.01284
ES4021	26	Same cutting board used for raw and cooked foods (H)	19.23	57.69	0.01284	0.39	0.38	NS
ES4023	42	Only non-porous utensils are used for food preparation	90.48	97.62	NS	0.08	0.06	NS
ES4024	51	Foods covered to prevent contamination (H)	96.08	100.00	NS	0.07	0.00	NS
ES4025	47	Leftovers of served foods discarded (H)	95.75	97.88	NS	0.04	0.00	NS
ES4027	58	Food containers labeled with contents (M)	80.50	87.50	NS	0.06	0.09	NS
N4089	58	All non-disposable cups, glasses, plates and utensils washed after each use (H)	100.00	94.83	NS	-0.09	-0.09	NS

ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data								
Risk Area: INFECTIOUS DISEASE - Food Service Sanitation								
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign <.05	delta L	delta DL	pMcNemar <.05
N4088	61	Disposable cups, glasses, plates and utensils are not reused (H)	96.72	98.36	NS	0.03	0.00	NS
ES4017	45	Sanitary procedure used to wash dishes and utensils (H)	68.89	86.67	0.00781	0.11	0.29	NS

(For pcom90/91 and n of linked and delayed-linked, find item alphabetically in "Listing for Rocky Feuer")

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ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data									
Risk Area: INFECTIOUS DISEASE - Diapering/Toileting									
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign <.05	delta L	delta DL	pMcNemar <.05	
ES4057	44	Program uses disposable diapers or diapers with waterproof lining removed as a unit (H)	100.00	100.00	--	0.00	0.00	--	
ES2259	56	Program staff do not wash out soiled underclothing (H)	82.14	89.29	NS	0.06	0.09	NS	
ES4059	44	Have changing table or equivalent (H)	88.64	90.91	NS	0.04	0.00	NS	
ES4058	43	Closable foot-pedal operated receptacle for soiled diapers within arm's reach of diaper- changing table (H)	48.84	65.11	NS	0.00	0.39	NS	
ES4060	40	Diaper changing surface cleaned and sanitized after each use (H)	75.00	100.00	0.00195	0.28	0.20	NS	
ES4061	41	Separate surfaces used for food and diaper changing (H)	97.56	100.00	NS	0.00	0.06	NS	
ES4055	18	Training chairs are emptied and sanitized after each use in a sink used for no other purpose	33.33	66.67	NS	0.20	0.50	NS	
ES4045	64	Toilets separated from cooking, play, sleeping, eating areas (H)	95.31	96.88	NS	0.00	0.03	NS	
ES4049	67	Toilets suitable for independent use (M)	89.55	95.52	NS	0.05	0.07	NS	
ES4050	67	Toilet rooms and fixtures are clean and in good repair (H)	97.02	95.52	NS	-0.03	0.00	NS	

ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data									
Risk Area: INFECTIOUS DISEASE - Diapering/Toileting									
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign <.05	delta L	delta DL	pMcNemar <.05	
ES4052	66	Toilet rooms used by adult women have receptacles with lids (H)	72.73	78.79	NS	0.03	0.10	NS	
ES4051	66	Toileting rooms have easy-to-clean waste receptacles	98.49	96.97	NS	-0.03	0.00	NS	

(For pcom90/91 and n of linked and delayed-linked, find item alphabetically in "Listing for Rocky Feuer)

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ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data									
Risk Area: HEALTH PROMOTION - Documentation of Routine Health Supervision Services									
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign <.05	delta L	delta DL	pMcNemar <.05	
(For randomly selected 8 records, at least 80% documented required information or age-appropriate service)									
RC3030	67	Usual source of health care known (M)	88.06	79.10	NS	-0.08	-0.10	NS	
RC3031	67	Health insurance (M)	73.13	65.67	NS	0.00	-0.17	NS	
RC3032	67	Need for follow-up treatment known (M)	14.93	22.39	NS	0.07	0.06	NS	
RC3033	67	EPSDT screening (if eligible) (M)	55.22	47.76	NS	-0.05	-0.10	NS	
RC3034	67	Health history (M)	67.16	74.63	NS	0.07	0.07	NS	
RC3035	67	Physical examination (M)	86.57	82.09	NS	0.00	-0.10	NS	
RC3036	67	Blood pressure (M)	73.13	61.19	0.03469	-0.11	-0.14	NS	
RC3038	67	Weight (M)	59.70	76.12	NS	0.34	-0.07	0.00197	
RC3039	67	Height (M)	62.69	79.10	0.03469	0.32	-0.03	0.00853	
RC3040	64	Head circumference (M)	70.31	71.88	NS	0.03	0.00	NS	
RC3041a	67	Vision screening (M)	61.19	61.19	NS	0.03	-0.03	NS	
RC3042a	67	Speech and language screening (M)	38.81	47.76	NS	0.16	0.00	NS	
RC3043a	67	Hearing screening (M)	53.73	58.21	NS	0.03	0.07	NS	
RC3044a	65	Urine screening (M)	33.84	41.54	NS	0.14	0.00	NS	
RC3045a	68	Tuberculosis screening (M)	36.36	45.46	NS	0.08	0.10	NS	
RC3046a	64	Anemia screening (M)	17.19	23.44	NS	0.11	0.00	NS	

ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data									
Risk Area: HEALTH PROMOTION - Documentation of Routine Health Supervision Services									
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign <.05	delta L	delta DL	pMcNemar <.05	
RC3047a	64	Developmental assessment (M)	39.06	51.56	NS	0.17	0.07	NS	
RC3048a	67	Dental assessment (M)	58.21	46.27	NS	-0.08	-0.17	NS	

(For pcom90/91 and n of linked and delayed-linked, find item alphabetically in "Listing for Rocky Feuer")

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ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data									
Risk Area: HEALTH PROMOTION - Child Development/Sexual Abuse Prevention/Parent Involvement									
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign < .05	delta L	delta DL	pMcNemar < .05	
CHILD DEVELOPMENT									
CD2165	67	Preadmission visits routinely arranged for children enrolled in program (M)	89.55	88.06	NS	-0.05	0.03	NS	
CD2160	64	Written developmental assessments routinely performed at least semiannually (M)	82.81	73.44	NS	-0.17	0.00	NS	
A2087	67	Staff assigned to assessing development of individual children (M)	94.03	97.02	NS	0.03	0.03	NS	
A2090	67	Staff assigned to maintaining records of children's developmental progress (M)	94.03	100.00	NS	0.08	0.03	NS	
A2094	67	Staff assigned to discussing developmental progress of children with parents (M)	97.01	100.00	NS	0.05	0.00	NS	
CD4001a	64	Space indoors, is > 40 sq. ft. per child wall-to-wall (H)	50.00	56.25	NS	0.00	0.14	NS	
CD4001b	64	Staff/child ratio indoors meets PA regulation for I=1:4; T=1:5; PS=1:10; SA+1:12 (H)	76.56	75.00	NS	0.00	-0.03	NS	
CD4215a	57	Staff/child ratio outdoors meets PA regulation (See CD4001b) (H)	73.68	80.70	NS	-0.03	0.22	NS	

ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data									
Risk Area: HEALTH PROMOTION - Child Development/Sexual Abuse Prevention/Parent Involvement									
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign <.05	delta L	delta DL	pMcNemar <.05	
SEXUAL ABUSE PREVENTION									
ES4049	67	Toilets suitable for independent use (M)	89.55	95.52	NS	0.05	0.07	NS	
ES4047a	66	Toilets situated to prevent adult privacy with a child who needs assistance with toileting (H)	74.24	84.85	NS	0.00	0.24	0.02859	
PARENT INVOLVEMENT									
Program communicates with parents about:									
PI2196	67	parents' right to have access to child's record (M)	92.54	91.05	NS	-0.03	0.00	NS	
PI2197	64	attendance policy (M)	98.44	98.44	NS	-0.03	0.04	NS	
PI2198	63	termination policy (M)	95.24	96.83	NS	0.03	0.00	NS	
PI2199	65	opportunities to participate in program planning (M)	80.00	76.46	NS	0.06	-0.10	NS	
PI2200	66	classroom activities (M)	100.00	96.97	NS	-0.05	0.00	NS	
PI2201	63	group meetings (M)	90.46	92.06	NS	0.00	0.04	NS	
PI2202	45	parent advisory board (M)	62.22	84.44	NS	0.30	0.11	NS	
PI2203	65	meetings to discuss problems and progress of individual children (M)	100.00	100.00	--	0.00	0.00	--	
PI2204	67	program's daily activities (M)	98.51	95.52	NS	-0.03	-0.03	NS	

ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data									
Risk Area: HEALTH PROMOTION - Child Development/Sexual Abuse Prevention/Parent Involvement									
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign <.05	delta L	delta DL	pMcNemar <.05	
Program communicates with parents about:									
PI2205	64	hours of care provided (M)	100.00	100.00	--	0.00	0.00	--	
PI2206	58	responsibility for meals (M)	87.93	98.28	NS	0.12	0.08	NS	
PI2207	63	responsibility for clothing (M)	96.83	100.00	NS	0.03	0.04	NS	
PI2208	67	health policies and supervision (M)	97.02	98.51	NS	-0.03	0.07	NS	
PI2209	62	transport and pick-up arrangements (M)	82.28	91.94	NS	0.06	0.15	NS	
PI2211	62	safe pedestrian crossings, pick-up and drop off points	77.42	91.94	NS	0.12	0.18	NS	
PI2210	65	need for continual contact with staff (M)	98.46	98.46	NS	-0.03	0.03	NS	
Parents have opportunities to participate in:									
PI2220	67	program planning	64.18	71.64	NS	0.08	0.07	NS	
PI2221	67	classroom activities	79.10	89.55	NS	0.03	0.21	NS	
PI2222	67	group meetings	71.64	83.58	NS	0.13	0.10	NS	
PI2223	67	individual meetings	85.07	97.01	0.02148	0.08	0.17	NS	

(For pcom90/91 and n of linked and delayed-linked, find item alphabetically in "Listing for Rocky Feuer" c:\wp51\ecel\tables\hlhpro1.tbl 9/16/93)

ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data								
Risk Area: HEALTH PROMOTION - Nutrition								
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign <.05	delta L	delta DL	pMcNemar <.05
INFANT FEEDING								
N4062	32	Children do not have feeding bottles in cribs or beds and do not carry feeding bottles around with them (H)	56.25	56.25	NS	-0.10	0.17	NS
N4063	28	Infants under 6 months of age always held while being bottle-fed (M)	92.86	100.00	NS	0.06	0.09	NS
ES4064a N4064a	31	Formula brought to program only in factory-sealed containers (M)	16.13	25.81	NS	0.22	-0.08	0.01480
ES4065 N4065	33	Only disposable nurseries or sanitized bottles provided by parents or sanitized in a dishwasher at the program before use (M)	81.82	90.91	NS	0.10	0.08	NS
ES4065a N4065a	33	Microwave ovens are not used to heat infant formula (H)	33.33	39.39	NS	0.05	0.08	NS
ES4066 N4066	34	Unused portions of formula are discarded when feeding is over (H)	73.53	88.24	NS	0.19	0.07	NS
GENERAL NUTRITION								
N2239	56	Program participates in Child Care Food Program (M)	58.93	58.93	NS	-0.3	0.05	NS
N4071	65	Children who can feed themselves are seated in groups of 2-12 children (M)	98.92	89.23	NS	-0.11	-0.04	NS
N4072	50	Family-style food service for children over 18 months of age who feed themselves (M)	64.00	52.00	NS	-0.06	-0.21	NS

ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data									
Risk Area: HEALTH PROMOTION - Nutrition									
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign <.05	delta L	delta DL	pMcNemar <.05	
N4073	29	First serving by children, not staff (with help if necessary) (M)	63.07	68.97	NS	0.00	0.20	NS	
N4074	63	Staff eat with children who can feed themselves (M)	63.49	63.49	NS	0.00	0.00	--	
N4075	59	Staff eat same food as the children (M)	57.63	50.85	NS	-0.08	-0.05	NS	
N4077	64	Each child permitted to finish without being urged to hurry (M)	95.31	98.44	NS	0.03	0.04	NS	
N4078	63	Mealtime voices at conversational levels (M)	93.65	96.83	NS	0.03	0.04	NS	
N4079	64	Children encouraged, not forced to eat new foods (M)	98.44	98.44	NS	0.00	0.00	--	
N4081	54	Second helpings available to children (M)	87.04	87.04	NS	0.06	-0.10	NS	
N4082	55	Information about nutrition given to children during mealtime (M)	87.27	92.73	NS	0.03	0.10	NS	
N4083	64	Tables and chairs sized so child elbows no higher than mid-chest at meals (M)	98.88	98.44	NS	0.00	0.04	NS	
N4084	63	Chairs sized to provide firm foot rest at meals (M)	77.78	93.65	0.00635	0.08	0.27	NS	
N4094a	33	Foods served at breakfast include milk, fruit (or juice) or vegetable, grain product (M)	48.49	93.94	0.00073	0.50	0.38	NS	
N4094b	20	Foods served at a.m. snack do not include highly processed foods (M)	25.00	100.00	0.00006	0.67	0.88	NS	

ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data									
Risk Area: HEALTH PROMOTION - Nutrition									
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign < .05	delta L	delta DL	pMcNemar < .05	
N4094c	41	Foods served at lunch/supper includes two fruit/vegetables, meat or non-meat protein, grain product, dairy product (H)	56.10	97.56	0.00008	0.52	0.25	NS	
N4094d	37	Foods served at p.m. snack do not include highly processed foods (M)	35.14	100.00	0.00000	0.68	0.58	NS	
A2110	67	Staff are assigned to planning menus (M)	71.64	79.10	NS	0.08	0.07	NS	
A2111	67	Staff are assigned to order food (M)	79.10	82.09	NS	0.00	0.07	NS	
A2112	67	Staff are assigned to keep food records (M)	62.69	79.10	0.00342	0.08	0.28	NS	

(For pcom90/91 and n of linked and delayed-linked, find item alphabetically in "Listing for Rocky Feuer") c:\wp51\ecels\tables\hpnutrit1.tbl 9/16/93

ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data									
Risk Area: HEALTH PROMOTION - Dental Health									
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign <.05	delta L	delta DL	pMcNemar <.05	
DH2240	49	All children known to receive fluoride either in drinking water or in supplements at home or at program (H)	10.20	65.30	0.00000	0.48	0.64	NS	
DH4153	59	All children over two years of age brush their teeth (or have them brushed) after at least one meal at the facility (M)	52.54	47.46	NS	-0.06	-0.04	NS	
DH4062 ES4062	32	Children do not have feeding bottles in cribs or beds and do not carry feeding bottles around with them (H)	56.25	56.25	NS	-0.10	0.17	NS	
ES4156	35	Each toothbrush labelled with child's name	94.29	100.00	NS	0.05	0.08	--	

(For pcom90/91 and n of linked and delayed-linked, find item alphabetically in "Listing for Rocky Feuer"

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ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data									
Risk Area: HEALTH PROMOTION - Staff Health									
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign <.05	delta L	delta DL	pMcNemar <.05	
SH2148	63	All staff illness reported to single individual at the facility to identify patterns of illness (M)	79.37	87.30	NS	0.00	0.19	NS	
SH2149	65	All staff absences for illness require explanation to the program about the nature of the illness (M)	66.15	76.92	NS	0.08	0.14	NS	
SH2150a		A health professional's advice is sought whenever there is concern about implications of staff illness on child care (M)	73.13	86.57	NS	0.16	0.10	NS	
SH3033	67	Staff age or birth date recorded (L)	84.38	75.00	NS	-0.14	-0.03	NS	
SH3038	64	Staff experience/background documented (M)	87.50	84.38	NS	-0.03	-0.03	NS	
SH3039	64	Child abuse clearance on file for staff (H)	67.19	54.69	NS	-0.09	-0.17	NS	
SH3041	64	Record of courses or training taken since employment on file (M)	48.44	64.06	NS	0.09	0.24	NS	
SH3042	64	Record of employment, evaluation on file (M)	29.69	34.38	NS	0.06	0.03	NS	
SH3034	64	Staff health assessments documented in facility records (M)	76.56	89.06	0.03857	0.14	0.10	NS	
SH3036	64	Staff health assessments signed by MD (M)	82.81	79.69	NS	-0.14	0.10	0.04233	

ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data

Risk Area: HEALTH PROMOTION - Staff Health

Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign <.05	delta L	delta DL	pMcNemar <.05
SH3037	64	Staff health assessments note absence or presence of chronic illness (M)	32.81	37.50	NS	-0.03	0.14	NS
SH3035	63	Staff have been TB screened (H)	66.67	84.13	0.04329	0.02	0.14	NS

(For pcom90/91 and n of linked and delayed-linked, find item alphabetically in "Listing for Rocky Feuer")

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ECLS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data									
Risk Area: HEALTH PROMOTION - Written Health Policies									
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign < .05	delta L	delta DL	pMcNemar < .05	
HP1	67	Basis for exclusion or inclusion of children with health problems (H)	17.91	10.45	NS	0.00	-0.07	NS	
HP2	67	How child health will be evaluated prior to enrollment (H)	26.87	16.42	NS	-0.08	-0.14	NS	
HP3	67	Contents of child health record (H)	35.82	25.37	NS	-0.11	-0.10	NS	
HP4	67	How information is collected and used by program on child's usual feeding schedule, vitamin and mineral supplements, intolerance and allergies to food, likes and dislikes, cultural habits (M)	10.45	13.43	NS	0.11	-0.07	NS	
HP5	67	How a management plan is developed for a child with a health problem who can be in the program (M)	2.99	16.42	NS	0.21	0.03	--	
HP6	67	How parents are informed/required to assure that children receive recommended routine health assessment, including screening and immunizations (M)	26.87	23.88	NS	0.03	-0.10	NS	
HP7	67	How program knows children have received routine health supervision and results (M)	20.90	17.91	NS	0.03	-0.10	NS	
HP8	67	How children receive fluoride (M)	11.94	11.94	NS	-0.03	0.03	NS	
HP9	67	How program makes referrals when appropriate for medical, dental, developmental/mental health services (M)	8.96	16.42	NS	0.08	0.07	NS	

ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data									
Risk Area: HEALTH PROMOTION - Written Health Policies									
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign <.05	delta L	delta DL	pMcNemar <.05	
HP10	67	How program communicates among parents, staff and health professionals with protection of confidentiality (M)	23.88	17.91	NS	0.03	-0.17	NS	
HP11	67	Requires observation by program staff of each child for unusual behavior or signs of illness when parent transfers care of child to program staff (H)	8.96	13.43	NS	0.11	-0.03	NS	
HP12	67	Requires verbal or written exchange of information between parents and staff on a daily basis about child (M)	17.91	29.85	NS	0.13	0.10	NS	
HP13	67	How responsibility for food ordering, food service management, and menu planning are handled (M)	10.45	16.42	NS	0.08	0.03	NS	
HP14	67	Describes food service sanitation and safety procedures including food prepared at the site and food brought from home (H)	8.96	14.93	NS	0.08	0.03	NS	
HP15	66	How ill children are evaluated (H)	22.73	19.70	NS	0.03	-0.10	..	
HP16	67	When and how advice must be sought from a health professional (H)	22.39	37.31	0.04139	0.32	-0.07	0.00117	
HP17	65	How program is notified whenever a child is ill about nature of illness, treatment (M)	29.23	29.23	NS	0.08	-0.10	NS	
HP18	67	How parents are notified when their child is ill (H)	32.84	43.28	NS	0.18	0.00	NS	

ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data								
Risk Area: HEALTH PROMOTION - Written Health Policies								
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign < .05	delta L	delta DL	pMcNemar <.05
HP19	67	Describes interim management of ill children until parents come for the child (H)	10.45	16.42	NS	0.13	-0.03	NS
HP20	67	Describes medication administration by the program, including physician orders, label check, storage, parent consent, record of doses, reactions - or policy states no medications are given by program (H)	4.48	23.88	NS	0.13	0.28	NS
HP21	67	How outbreaks are recognized, what and how to report to health authorities, and parents (M)	10.48	11.94	NS	0.11	-0.10	0.03411
HP22	67	How/when control measures are used to manage outbreaks (M)	1.49	17.91	0.00635	0.26	0.03	0.00426
HP23	67	How records of child illness are kept (M)	4.48	13.43	NS	0.18	-0.03	0.02763
HP24	67	Basis for decision to exclude child who is ill at the beginning of the day (H)	37.31	40.30	NS	0.18	-0.17	0.02567
HP25	67	Basis for exclusion of children who become ill during the day (H)	28.36	32.84	NS	0.18	-0.14	0.01577
HP26	67	Basis for exclusion of staff who become ill (before or at work) (H)	5.97	17.91	NS	0.11	0.14	NS
HP27	67	Emergency evacuation plan, where the plan is to be posted, staff responsibilities (H)	7.46	20.90	NS	0.18	0.07	NS

ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data									
Risk Area: HEALTH PROMOTION - Written Health Policies									
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign <.05	delta L	delta DL	pMcNemar <.05	
HP28	67	Specifies frequency, timing, and evaluation of scheduled and unannounced drills (H)	4.48	16.42	NS	0.21	0.00	0.02321	
HP29	67	Identifies an alternate shelter to be used if child care building can not be reoccupied (M)	4.48	13.43	NS	0.13	0.03	NS	
HP30	67	Emergency plan for serious illnesses and injuries, first aid, staff responsibilities on site, on trips (H)	5.97	26.87	NS	0.24	0.17	NS	
HP31	67	Emergency medical facility to be used (M)	5.97	16.42	NS	0.13	0.07	NS	
HP32	66	Review of injury reports to identify hazards (H)	0.00	12.12	NS	0.16	0.07	NS	
HP33	66	Mechanism for routine site (and vehicular, if used) survey for hazards, including how follow-up assures that hazardous conditions are corrected (M)	3.03	16.67	NS	0.14	0.14	NS	
HP34	67	Requires that children are never left unattended (H)	16.42	16.42	NS	0.11	-0.14	NS	
HP35	67	Specifies staff/child ratios by activity (classroom, nap time, swimming, transportation) (H)	11.94	16.42	NS	0.11	-0.03	NS	
HP36	67	Specifies safe storage, use and disposal of toxic materials such as cleaning supplies, pesticides (M)	4.48	19.40	NS	0.16	0.14	NS	

ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data									
Risk Area: HEALTH PROMOTION - Written Health Policies									
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign <.05	delta L	delta DL	pMcNemar <.05	
HP37	67	Permissible toys, equipment, supplies for purchase, donation and use in the program (M)	7.46	19.40	NS	0.18	0.03	NS	
HP38	67	Requires staff assure that safety restraints are used for vehicular travel (H)	13.43	14.93	NS	0.00	0.03	NS	
HP39	67	Describes safe travel, arrival and departure routines (H)	7.46	11.94	NS	0.08	0.00	NS	
HP40	67	Safety practices for walking and vehicular trips away from the site (H)	4.48	11.94	NS	0.16	-0.03	NS	
HP41	67	Limitations on staff as drivers for children in the program (M)	1.49	11.94	0.03906	0.13	0.07	NS	
HP42	67	Describes frequency and method of hand washing required of children, adults (H)	11.94	19.40	NS	0.11	0.03	NS	
HP43	67	Describes handling of toileting, diapering, clean up and change of soiled clothing (H)	4.48	16.42	NS	0.18	0.03	NS	
HP44	67	Routines for cleaning of linen and other laundry (M)	13.43	29.85	NS	0.18	0.14	NS	
HP45	67	How children over two years of age practice daily dental hygiene, including arrangements for sanitary tooth brush storage (H)	5.97	8.96	NS	0.03	0.03	NS	

ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data									
Risk Area: HEALTH PROMOTION - Written Health Policies									
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign <.05	delta L	delta DL	pMcNemar <.05	
HP46	67	Facility cleaning regimen, including frequency, method, material used for cleaning and sanitizing (H)	1.49	7.46	NS	0.11	0.00	NS	
HP47	67	Initial and ongoing health assessment routines including content and frequency of required health services, evaluation of history of child abuse (M)	7.46	10.45	NS	0.05	0.00	NS	
HP48	67	Describes health risks related to child care, preventive measures, benefits for staff (M)	2.99	8.96	NS	0.16	-0.07	0.00269	
HP49	67	How job-related illness and injury are handled, including exclusion and leave benefits (M)	4.48	8.96	NS	0.08	0.00	NS	
HP50	67	Provision for staff breaks, substitutes for program sanctioned absences (M)	1.49	11.94	NS	0.11	0.10	NS	
HP51	67	How health issues and behaviors are used in staff evaluation (M)	1.49	5.97	NS	0.08	0.00	NS	
HP52	67	Methods, topics for routine health education of children, parents, staff, volunteers (L)	11.94	5.46	NS	-0.08	0.00	NS	
HP53	67	Identifies resources and arrangements for training, curriculum development, health consultation (H)	11.94	11.94	NS	0.00	0.00	--	
HP54	67	Signs of abuse to be recognized and documented by staff (H)	4.48	7.46	NS	0.11	-0.07	0.04666	

ECELS Pre-Test (1990) and Post-Test (1991) Compliance for 67 Centers with Paired Data									
Risk Area: HEALTH PROMOTION - Written Health Policies									
Item # '90/'91	n	Item Description (Weight: H = greatest, M = medium, L = low risk)	pcom90	pcom91	psign <.05	delta L	delta DL	pMcNemar <.05	
HP55	67	How reports are filed when abuse or neglect are suspected (H)	19.40	16.42	NS	0.00	-0.07	NS	
HP56	67	How accusations of abuse by staff are handled (H)	7.46	4.48	NS	0.08	-0.17	0.00236	
HP57	66	How children who have been abused or neglected are handled by the program (H)	9.09	4.55	NS	0.00	-0.10	NS	

(For pcom90/91 and n of linked and delayed-linked, find item alphabetically in "Listing for Rocky Feuer") c:\wp51\ecels\tables\hpwrfltn.tbl 9/30/93

APPENDIX C3

Data Tables

ECELS (1991) New Item Compliance

ECELS (1991) New Item Compliance
67 Child Care Centers

Risk Area: INJURIES

Item #	Item Description and Weight (Weight: H = greatest, M = medium, L = low risk)	All Sites		Linked Sites		Delayed-Linked	
		n	pcom91	n	pcom91	n	pcom91
ES1015a	Site has written approval from building authority (H)	67	71.64	38	71.05	29	72.41
ES1015b	Site has written approval from fire inspection authority (H)	66	46.97	37	48.65	29	44.83
ES1015c	Site has written approval from electrical inspection authority (H)	66	27.27	37	29.73	29	24.14
ES1015d	Site has written approval from a lead inspection (H)	66	24.24	37	27.03	29	20.69
ES1015f	Site has written approval from health inspection (H)	66	48.48	37	54.05	29	41.38
ES1016c	No notices of deficiencies issued for site in past 12 months (M)	67	94.03	38	92.11	29	93.55
O2268	Local traffic authorities have been asked to review pedestrian and vehicular routes around the program site (H)	64	43.75	36	41.67	28	46.43
T2278b	Staff/child ratio for transportation (exclude driver) for infants is 1:4 (M)	21	16.19	14	71.43	7	85.71
T2278c	Staff/child ratio for transportation (exclude driver) for toddlers is 1:5 (M)	28	92.86	19	94.74	9	89.89
T2278d	Staff/child ratio for transportation (exclude driver) for preschoolers is 1:10 (M)	48	83.33	29	82.76	19	84.21
T2280a	All drivers are at least 18 years of age (M)	48	100.00	29	100.00	19	100.00
T2280b	All drivers have current, valid drivers license (H)	47	97.87	29	96.55	18	100.00
T2428	Children are never left unattended in vehicle, even briefly (H)	52	100.00	32	100.00	20	100.00

ECELS (1991) New Item Compliance 67 Child Care Centers									
T2430	Vehicle doors are always locked when vehicle is in motion (M)	50	94.00	31	93.55	19	94.74		
T4241c	Children are picked up and dropped off only at the curb or at an off-street location that is protected from traffic (H)	48	85.42	27	81.48	21	90.48		
T4241d	Children are supervised during boarding and exiting from vehicles by an adult who is outside the vehicle (H)	45	77.78	26	73.08	19	84.21		
T2430a	A backup vehicle is always available to be dispatched in case of a vehicle break-down or emergency (L)	45	88.89	27	85.19	18	94.44		
T2430b	All vehicles operated by the program are air-conditioned whenever the temperature exceeds 75 degrees F. (M)	45	64.44	27	70.37	18	55.56		
T2430c	All vehicles operated by the program are heated whenever the temperature drops below 50 degrees F. (M)	46	100.00	28	100.00	18	100.00		
CD4001c	Outdoor area is at least 65 square feet per child at the time of use (M)	64	71.88	37	75.68	27	66.67		
ES4209a	Protective handrails on all porches, landings, balconies and similar structures from which children could fall (H)	32	81.25	20	75.00	12	91.67		
ES4225A	Climbers are no taller than 3 feet for children under 3 years of age and no more than 5 feet for children 3-5 years of age (H)	57	70.18	34	67.65	23	73.91		
CD4215b	Palyground surface free of trip hazards (M)	64	79.69	37	75.68	27	85.19		
ES2502a	Staff/child ratio for swimming for infants is 1:1 (H)	16	56.25	10	50.00	6	66.67		
ES2502b	Staff/child ratio for swimming for toddlers is 1:2 (H)	22	22.73	13	23.08	9	22.22		
ES2502c	Staff/child ratio for swimming for preschoolers is 1:4 (H)	30	56.67	18	61.11	12	50.00		
ES2502d	Staff/child ratio for swimming for school age children is 1:6 (H)	21	76.19	12	68.67	9	88.89		

ECELS (1991) New Item Compliance 67 Child Care Centers							
SN2287c	Staff who care for children with special needs are CPR certified (H)	44	93.18	23	95.65	21	90.48
ES4059b	Changing tables are sturdy, adult height and equipped with a railing to keep the child from falling (not easily contaminated straps (H)	47	74.47	26	84.62	21	61.90
EE4003a	There is a fire extinguisher in the kitchen (M)	56	91.07	30	93.33	26	91.07
ES4016	Kitchen staff can accurately describe how to use fire extinguisher (M)	53	90.57	29	89.66	24	91.67
ES1016d	Local fire authority observed an evacuation drill within the past year (H)	67	38.81	38	39.47	29	37.93
Risk Area: INFECTIOUS DISEASES							
ES1015e	Site has written approval from an inspection by a sanitarian (H)	66	37.88	37	40.54	29	20.69
ES4014	Perishable food or all food brought from home is refrigerated until eaten (H)	67	89.55	38	86.84	29	93.10
N4069	All areas used for food dispersal to children thoroughly cleaned or covered with clean place mats or table cloths before us (H)	40	85.00	25	84.00	15	86.67
ES4012a	Hot water temperature in dishwasher has been checked and found to reach at least 170 degrees F. (H)	27	66.67	15	60.00	12	75.00
HS2406	A separate area is provided for care of ill children (H)	67	89.55	38	89.47	29	89.66
HS2407	Parents of ill children are notified immediately (M)	67	91.04	38	94.74	29	88.21
HS2408	Program accepts children with mild illness for care (M)	66	74.24	37	75.68	29	72.24

ECELS (1991) New Item Compliance 67 Child Care Centers									
HS2409	Written or telephone instructions from a health provider are required to administer medication (H)	67	83.58	38	84.21	29	82.76		
ES4059a	The diaper changing table has an impervious surface (H)	47	87.23	26	92.31	21	44.68		
ES4059c	Soiled diapers are not washed out by staff (H)	47	27.66	26	19.23	21	38.10		
ES4059d	Only disposable wipes are to clean children's diaper area (H)	50	92.00	29	93.10	21	90.48		
ES4059e	Caregivers wash their hands before putting a fresh diaper on a child (H)	50	62.00	29	65.52	21	57.14		
ES4060a	Caregivers wash their hands after changing diapers or underclothing, even if they wore disposable gloves (H)	50	92.00	29	96.55	21	85.71		
ES4156a	Caregivers wash their hands on arrival at the center, before working with the children (M)	65	29.63	38	34.21	27	29.63		
ES4059f	Children's hands are washed after their diapers are changed (H)	50	60.00	29	62.07	21	57.14		
DH4155	Toothbrushes are stored to air dry without contamination (H)	38	86.84	20	100.00	18	72.22		
ES2501	Pool water is tested and treated with chemicals to keep the ph between 7.2 and 8.2 (level indicating control of bacteria) (H)	28	28.57	16	37.50	16	37.50		
ES2500	No portable wading pools with unfiltered water used by more than one child without changing the water between children (H)	41	73.17	23	82.61	18	61.11		
ES2258	Trash is removed from the building daily (M)	67	97.01	38	100.00	29	93.10		
Risk Area: HEALTH PROMOTION									
CD2316	Each child has one primary caregiver assigned routinely (H)	64	70.31	35	65.71	29	75.86		
A2070a1	Program has a nurse-consultant (M)	66	71.21	38	71.05	28	71.43		

ECELS (1991) New Item Compliance
67 Child Care Centers

A2070a	Program has a physician as a health consultant (M)[A2070a is not a new item; listed in this table for '91 for comparison with other consultant data. See Health Promotion Paired Data Table]	66	46.97	38	50.00	28	42.86
A2070b	Program has a nutrition consultant (M)[A2070b is not a new item; listed in this table for '91 for comparison with other consultant data. See Health Promotion Paired Data Table]	66	40.91	38	42.11	28	39.29
A2070b1	Program has a mental health consultant (M)	66	62.12	38	63.16	28	60.71
A2070b2	Program has a dental health consultant (M)	66	28.79	38	31.58	28	25.00
A2094a	Name given of staff responsible for making referrals to community resources (M)	67	100.00	38	100.00	29	100.00
A2101a	Name given for staff responsible for orienting new caregivers (M)	67	98.51	38	97.37	29	100.00
A2101b	Name given for staff responsible for arranging training for staff (M)	67	97.01	38	94.74	29	100.00
A2113a	Name given for staff responsible for storing food (M)	67	85.07	38	92.11	29	75.86
A2113b	Name given for staff responsible for preparing food (M)	67	80.60	38	86.84	29	72.41
A2113c	Name given for staff responsible for cleaning kitchen (M)	67	83.58	38	89.47	29	75.86
N2227	Menus are planned for more than a month at a time (M)	50	62.00	29	68.97	21	52.38
ES4029	Continuous inventory sheets are used in food storage room (L)	54	48.15	31	61.29	23	30.43
CD2172	Site routinely checks that each child is up-to-date with routine health care using the schedule recommended by the AAP (H)	67	89.55	38	94.74	29	82.76
HS2167a	Site routinely collects information re locally available sources of medical services (M)	67	83.58	38	81.58	29	83.21

ECELS (1991) New Item Compliance 67 Child Care Centers									
HS167b	Site routinely collects information re locally available sources of dental services (M)	67	70.15	38	63.16	29	79.31		
HS167c	Site routinely collects information re locally available sources of mental health services (M)	67	76.12	38	71.05	29	82.76		
HS167d	Site routinely collects information re locally available sources of nutrition services (M)	67	70.15	38	63.16	29	79.31		
S167e	Site routinely collects information re locally available sources of social services (M)	67	86.57	38	86.84	29	86.21		
SN2285a	Each child with a disability at this site has an assigned care coordinator (M)	40	90.00	21	85.74	19	94.74		
SN2286b	If site serves children with disabilities, someone on the staff is certified in special education (M)	44	54.55	22	63.64	22	45.45		
SN3400	For each child with a disability, site has a written, multidisciplinary evaluation and plan (IFSP) (H)	54	62.96	30	63.33	24	62.50		
Training	Site provided training in the past 12 months in a planned way :								
	who received training	training topic							
TR2312a	children	65	29.23	36	30.56	29	27.59		
TR2312b	parents	66	60.61	37	67.57	29	51.72		
TR2312c	staff	67	83.56	38	84.21	29	82.76		
TR2312d	volunteers	34	91.18	23	86.96	11	100.00		
TR2316a	children	65	9.23	36	8.33	29	10.34		
TR2316b	parents	66	42.42	37	45.95	29	37.93		

ECELS (1991) New Item Compliance 67 Child Care Centers									
TR2316c	staff		caring for ill children (H)	66	75.76	37	75.68	29	75.86
TR2316d	volunteers		caring for ill children (M)	22	95.45	15	93.33	7	100.00
TR2313a	children		parent involvement (M)	12	100.00	10	100.00	2	100.00
TR2313b	parents		parent involvement (H)	67	67.16	38	71.05	29	62.07
TR2313c	staff		parent involvement (H)	66	66.67	37	70.27	29	62.07
TR2313d	volunteers		parent involvement (H)	25	96.00	16	100.00	9	88.89
TR2314a	children		child development (M)	13	61.54	8	62.50	5	60.00
TR2314b	parents		child development (H)	66	66.67	37	64.86	29	68.97
TR2314c	staff		child development (H)	66	84.85	37	83.78	29	86.21
TR2314d	volunteers		child development (H)	29	100.00	17	100.00	12	100.00
TR2315a	children		preventing infection (H)	66	48.48	37	54.05	29	41.38
TR2315b	parents		preventing infection (H)	66	56.06	37	62.16	29	48.28
TR2315c	staff		preventing infection (H)	67	83.58	38	78.95	29	89.66
TR2315d	volunteers		preventing infection (H)	27	96.30	19	94.74	8	100.00
TR2317a	children		preventing injury (H)	66	54.55	37	54.05	29	55.17
TR2317b	parents		preventing injury (H)	63	50.79	34	55.88	29	44.83
TR2317c	staff		preventing injury (H)	67	80.60	38	86.84	29	72.41
TR2317d	volunteers		preventing injury (H)	27	96.30	18	100.00	9	88.89

ECELS (1991) New Item Compliance 67 Child Care Centers										
TR2318a	children		first aid for children (H)	64	14.06	35	17.14	29		10.34
TR2318b	parents		first aid for children (H)	65	36.92	36	38.89	29		34.42
TR2318c	staff		first aid for children (H)	67	86.57	38	89.47	29		82.76
TR2318d	volunteers		first aid for children (H)	23	95.65	14	100.00	9		88.89
TR2319a	children		nutrition (M)	66	51.52	37	59.46	29		41.38
TR2319b	parents		nutrition (H)	64	42.19	36	38.89	28		46.43
TR2319c	staff		nutrition (H)	67	71.64	38	76.32	29		65.52
TR2319d	volunteers		nutrition (M)	20	100.00	14	100.00	6		100.00
TR2320a	children		child abuse (H)	64	25.00	35	25.71	29		24.14
TR2320b	parents		child abuse (H)	65	35.38	36	38.89	29		31.03
TR2320c	staff		child abuse (H)	64	76.56	35	80.00	29		72.41
TR2320d	volunteers		child abuse (H)	21	100.00	14	100.00	7		100.00

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APPENDIX C4

Data Tables

Family Child Care Homes - Items with <50% Compliance

POST TEST COMPLIANCE FOR 20 FAMILY CHILD CARE HOMES Items with < 50% compliance			
Item #	Item Description and Weight (H = greatest risk, M = medium risk, L = low risk)	n	%
Risk Area: INJURIES			
ES4222	Broken equipment accessible to children (H)	16	43.7
ES4228	Play area near hazards, ditches, wells, heavy traffic (H)	18	50.0
ES4229	Swimming pools fenced with a locked gate (H)	6	50.0
ES3034	Date of most recent site self-inspection within one month (M)	20	10.0
FA4143	Syrup of Ipecac on hand (H)	19	21.0
EE3130	Most recent fire drill not > 1 month ago (H)	20	0.00
EE2B047	Emergency contact information for children verified within past 6 months (H)	20	50.00
ES2262	Exterminator does not apply pesticides on surfaces used by children or in contact with food(H)	8	12.5
ES2265	Children are not present when exterminator applies chemicals (H)	8	12.5
ES2264	Chemicals used to control pests are known and approved for use in child care (H)	11	9.0
ES4225	Playground surface is a cushioning material recommended by the USCPSC (H)	17	29.4
T4231a	Children ride bikes wearing helmets (H)	11	18.1
Risk Area: INFECTIOUS DISEASE			
SH4066	Staff wash hands after diapering/toileting (H)	6	50.0
ES2B051	Trash stored in sturdy metal/plastic container (H)	20	50.0
ES2B109a	Pool water is tested (pH) to monitor pool water sanitation (H)	13	23.0
ES2B108	Unfiltered wading pools are not used for multiple children (H)	20	35.0
ES4059b	Changing table sturdy, adult height with railings, not easily contaminated straps, to prevent falls (H)	11	27.0
ES4059c	Soiled diapers/training pants are not washed out by the caregiver (H)	13	15.0
ES4059f	Children's hands are washed after each diaper change (H)	13	38.0

POST TEST COMPLIANCE FOR 20 FAMILY CHILD CARE HOMES Items with < 50% compliance			
RC3049	records for DTP immunization up-to-date (H)	20	20.0
RC3050	records for polio immunization up-to-date (H)	20	30.0
RC3051	records for Hib immunization up-to-date (H)	20	35.0
RC3035	records for TB screening of adults in the home show screening not more than one year ago	18	5.50
Risk Area: HEALTH PROMOTION			
CD2B038	Developmental assessments are routinely performed for children at least semiannually (L)	20	50.0
DH2240	Children known to receive fluoride either in drinking water or in supplements at home or at program (L)	20	30.0
DH4061	Children receive oral hygiene during the child care day (M)	20	20.0
DH4063	A drink of water offered to children over 6 months of age who do not brush their teeth after eating (M)	19	15.7
N4064a	Formula brought to the child care home in a factory-sealed container (M)	7	42.8
N2B030	Parents are given a copy of the menu used in the program (L)	19	21.0
N4072	Family-style food service for children over 18 months who can feed themselves (L)	20	10.0
N4045	First serving by children, not caregiver, with caregiver help if necessary (M)	9	11.1
N2B027	Caregiver eats with children (L)	20	40.0
N4047	Foods served at breakfast include milk, fruit (or juice) or vegetable, grain product	3	33.3
N4048	Foods served at a.m. snack do not include highly processed foods (M)	3	33.3
N4050	Foods served at p.m. snack do not include highly processed foods (M)	3	33.3
RC3034	Child health record includes health history (M)	20	45.0
RC3042b	Child health record includes speech/language screening (M)	20	40.0
RC3043a	Child health record includes hearing screening (M)	20	35.0
RC3046a	Child health record includes anemia screening (M)	20	5.0

POST TEST COMPLIANCE FOR 20 FAMILY CHILD CARE HOMES Items with < 50% compliance			
RP2B063	Provider has a routine way to inform parents about routine health services recommended by the AAP and required for participation in child care (M)	20	36.8
RC3034	Staff health assessment is on file	18	5.50
RC3039	Child abuse clearance is on file	18	11.1

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APPENDIX C5

Data Tables

Alphabetical Listing of Items on Pretest/Posttest Study

The SAs System 16:31 Monday, September 13, 1993

CBS	VAR90	VAR91	NUM_A	PCCHP90	PCCHP91	NUMSH	NUMSTO	NUMHTO	HSIG
1	A2037	A2037	67	85.0746	67.164	16	2	14	-6.0
2	A2038	A2038	66	71.2121	69.697	17	8	9	-0.5
3	A2070A	A2070A	66	4.5455	46.970	28	28	0	14.0
4	A2070B	A2070B	66	3.0303	40.909	25	25	0	12.5
5	A2070C	A2070C	66	16.6667	48.485	23	22	1	10.5
6	A2075	A2075	66	93.9391	98.485	5	4	1	1.5
7	A2077	A2077	66	89.3939	93.939	9	6	3	1.5
8	A2079	A2079	67	53.7313	67.164	19	14	5	4.5
9	A2080	A2080	67	86.5672	100.000	9	9	0	4.5
10	A2082	A2082	67	95.5224	97.015	3	2	0	0.5
11	A2083	A2083	67	98.5075	100.000	1	1	0	0.5
12	A2084	A2084	67	98.5075	97.015	3	1	2	-0.5
13	A2085	A2085	66	95.4545	95.455	6	3	3	0.0

CBS	PSIGH	U_L	U_DL	PC90_L	PC90_DL	PC91_DL	NUMSH_L	SHPC_L
1	0.00418	38	29	81.5789	65.789	89.655	68.966	10
2	1.00000	37	29	64.8649	70.270	79.310	68.966	12
3	0.00000	38	28	2.6316	50.000	7.143	42.857	18
4	0.00000	38	28	2.6316	42.105	3.571	39.286	15
5	0.00001	38	28	15.7895	50.000	17.857	46.429	15
6	0.37500	38	28	97.3684	97.368	89.286	100.000	2
7	0.00781	37	29	91.8919	89.189	86.207	100.000	5
8	0.06357	38	29	52.6316	71.053	55.172	62.069	9
9	0.00391	38	29	85.8421	100.000	86.207	100.000	5
10	1.00000	38	29	94.7368	97.368	96.552	96.552	3
11	1.00000	38	29	97.3684	100.000	100.000	100.000	1
12	1.00000	38	29	97.3684	94.737	100.000	100.000	3
13	1.00000	38	28	97.3684	92.105	92.857	100.000	4

CBS	NUMSH_DL	SWPC_DL	P2SAMMAC	DELTA2	DELTA_L	DELTA_DL
1	6	0.000	0.65366	0.04900	-0.15789	-0.20690
2	5	20.000	0.18723	0.15750	0.05405	-0.10345
3	10	100.000	0.33743	0.11654	0.47368	0.35714
4	10	100.000	0.75478	0.03759	0.39474	0.35714
5	8	100.000	0.61068	0.05639	0.34211	0.28571
6	3	100.000	0.12205	-0.10714	0.00000	0.10714
7	4	100.000	0.06047	-0.16496	-0.02703	0.13793
8	10	60.000	0.37768	0.11525	0.18421	0.06897
9	4	100.000	0.93934	-0.00635	0.13158	0.13793
10	0	0.000	0.56198	0.02632	0.02632	0.00000
11	0	0.000	0.31086	0.02632	0.02632	0.00000
12	0	0.000	0.56198	-0.02632	-0.02632	0.00000
13	2	100.000	0.08113	-0.12406	-0.05263	0.07143

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CBS	VAR90	VAR91	NUM_A	PCCHP90	PCCHP91	NUMSH	NUMSTO	NUMHTO	HSIG
14	A2086	A2086	67	86.5672	83.582	14	6	8	-1.0
15	A2087	A2087	67	94.0299	97.015	6	4	2	1.0
16	A2090	A2090	67	94.0299	100.000	4	4	0	2.0
17	A2091	A2091	67	94.0299	100.000	4	1	0	2.0
18	A2092	A2092	67	97.0149	98.507	3	2	0	0.5
19	A2094	A2094	67	97.0149	100.000	2	2	0	1.0
20	A2103	A2103	66	75.7576	96.959	20	15	5	5.0
21	A2104	A2104	67	88.0597	94.030	10	7	3	2.0
22	A2105	A2105	67	95.5224	100.000	3	3	0	1.5
23	A2107	A2107	67	83.5821	88.060	9	6	3	1.5
24	A2110	A2110	67	71.6418	79.104	9	7	2	2.5
25	A2111	A2111	67	79.1045	82.090	10	6	4	1.0
26	A2112	A2112	67	62.6866	75.154	13	12	1	5.5

CBS	PSIGH	U_L	U_UL	PC90_L	PC91_L	PC90_DL	PC91_DL	NUMSH_L	SHPC_L
14	0.79053	38	29	89.4737	81.579	82.759	86.207	11	36.364
15	0.68750	38	29	92.1053	91.737	96.552	100.000	5	60.000
16	0.12500	38	29	92.1053	100.000	96.552	100.000	3	100.000
17	0.12500	38	29	92.1053	100.000	96.552	100.000	3	100.000
18	1.00000	38	29	94.7368	97.368	100.000	100.000	3	66.667
19	0.50000	38	29	94.7368	100.000	100.000	100.000	2	100.000
20	0.04139	38	29	78.9474	92.105	71.429	89.286	11	72.727
21	0.34375	38	29	92.1053	97.368	82.759	89.655	4	75.000
22	0.35000	38	29	94.7368	100.000	96.552	100.000	2	100.000
23	0.50781	38	29	81.5789	86.842	86.207	89.655	6	66.667
24	0.17969	38	29	76.3158	81.211	55.517	72.414	5	80.000
25	0.75391	38	29	86.8421	86.842	58.966	75.862	4	50.000
26	0.00342	38	29	76.3158	81.211	41.828	72.414	5	80.000

CBS	NUMSH_DL	SWPC_DL	P2SAMMAC	DELTA2	DELTA_L	DELTA_DL
14	3	66.667	0.27903	-0.11313	-0.07895	0.03148
15	1	100.000	0.90408	-0.06817	0.02632	0.03118
16	1	100.000	0.42163	0.01446	0.07895	0.03118
17	1	100.000	0.42163	0.01446	0.07895	0.03118
18	0	0.000	0.56198	0.02632	0.02632	0.00000
19	0	0.000	0.14623	0.05263	0.05263	0.00000
20	9	77.778	0.72241	-0.01699	0.13158	0.17857
21	6	66.667	0.86806	-0.01633	0.05263	0.08897
22	1	100.000	0.71144	0.01915	0.05263	0.03118
23	3	66.667	0.83518	0.01915	0.05263	0.03118
24	1	75.000	0.91053	0.00728	0.07895	0.08897
25	6	66.667	0.48167	-0.06897	0.00000	0.08897
26	8	100.000	0.05106	0.11491	0.07895	0.07589

The SAS System

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OBS	VAP90	VAP91	HHH_A	PCOMP90	PCOMP91	HHH_B	PCOMP90	PCOMP91	HHH_C	HHH_D	HHH_E	HHH_F	HHH_G	HHH_H	HHH_I	HHH_J	HHH_K	HHH_L	HHH_M	HHH_N	HHH_O	HHH_P	HHH_Q	HHH_R	HHH_S	HHH_T	HHH_U	HHH_V	HHH_W	HHH_X	HHH_Y	HHH_Z	HHH_AA	HHH_AB	HHH_AC	HHH_AD	HHH_AE	HHH_AF	HHH_AG	HHH_AH	HHH_AI	HHH_AJ	HHH_AK	HHH_AL	HHH_AM	HHH_AN	HHH_AO	HHH_AP	HHH_AQ	HHH_AR	HHH_AS	HHH_AT	HHH_AU	HHH_AV	HHH_AW	HHH_AX	HHH_AY	HHH_AZ	HHH_BA	HHH_BB	HHH_BC	HHH_BD	HHH_BE	HHH_BF	HHH_BG	HHH_BH	HHH_BI	HHH_BJ	HHH_BK	HHH_BL	HHH_BM	HHH_BN	HHH_BO	HHH_BP	HHH_BQ	HHH_BR	HHH_BS	HHH_BT	HHH_BU	HHH_BV	HHH_BW	HHH_BX	HHH_BY	HHH_BZ	HHH_CA	HHH_CB	HHH_CC	HHH_CD	HHH_CE	HHH_CF	HHH.CG	HHH_CH	HHH_CI	HHH_CJ	HHH_CK	HHH_CL	HHH_CM	HHH_CN	HHH_CO	HHH_CP	HHH_CQ	HHH_CR	HHH_CS	HHH_CT	HHH_CU	HHH_CV	HHH_CW	HHH_CX	HHH_CY	HHH_CZ	HHH_DA	HHH_DB	HHH_DC	HHH_DD	HHH_DE	HHH_DF	HHH_DG	HHH_DH	HHH_DI	HHH_DJ	HHH_DK	HHH_DL	HHH_DM	HHH_DN	HHH_DO	HHH_DP	HHH_DQ	HHH_DR	HHH_DS	HHH_DT	HHH_DU	HHH_DV	HHH_DW	HHH_DX	HHH_DY	HHH_DZ	HHH_EA	HHH_EB	HHH_EC	HHH_ED	HHH_EE	HHH_EF	HHH_EG	HHH_EH	HHH_EI	HHH_EJ	HHH_EK	HHH_EL	HHH_EM	HHH_EN	HHH_EO	HHH_EP	HHH_EQ	HHH_ER	HHH_ES	HHH_ET	HHH_EU	HHH_EV	HHH_EW	HHH_EX	HHH_EY	HHH_EZ	HHH_FA	HHH_FB	HHH_FC	HHH_FD	HHH_FE	HHH_FF	HHH_FG	HHH_FH	HHH_FI	HHH_FJ	HHH_FK	HHH_FL	HHH_FM	HHH_FN	HHH_FO	HHH_FP	HHH_FQ	HHH_FR	HHH_FS	HHH_FT	HHH_FU	HHH_FV	HHH_FW	HHH_FX	HHH_FY	HHH_FZ	HHH_GA	HHH_GB	HHH_GC	HHH_GD	HHH_GE	HHH_GF	HHH_GG	HHH_GH	HHH_GI	HHH_GJ	HHH_GK	HHH_GL	HHH_GM	HHH_GN	HHH_GO	HHH_GP	HHH_GQ	HHH_GR	HHH_GS	HHH_GT	HHH_GU	HHH_GV	HHH_GW	HHH_GX	HHH_GY	HHH_GZ	HHH_HA	HHH_HB	HHH_HC	HHH_HD	HHH_HE	HHH_HF	HHH_HG	HHH_HH	HHH_HI	HHH_HJ	HHH_HK	HHH_HL	HHH_HM	HHH_HN	HHH_HO	HHH_HP	HHH_HQ	HHH_HR	HHH_HS	HHH_HT	HHH_HU	HHH_HV	HHH_HW	HHH_HX	HHH_HY	HHH_HZ	HHH_IA	HHH_IB	HHH_IC	HHH_ID	HHH_IE	HHH_IF	HHH_IG	HHH_IH	HHH_II	HHH_IJ	HHH_IK	HHH_IL	HHH_IM	HHH_IN	HHH_IO	HHH_IP	HHH_IQ	HHH_IR	HHH_IS	HHH_IT	HHH_IU	HHH_IV	HHH_IW	HHH_IX	HHH_IY	HHH_IZ	HHH_JA	HHH_JB	HHH_JC	HHH_JD	HHH_JE	HHH_JF	HHH_JG	HHH_JH	HHH_JI	HHH_JJ	HHH_JK	HHH_JL	HHH_JM	HHH_JN	HHH_JO	HHH_JP	HHH_JQ	HHH_JR	HHH_JS	HHH_JT	HHH_JU	HHH_JV	HHH_JW	HHH_JX	HHH_JY	HHH_JZ	HHH_KA	HHH_KB	HHH_KC	HHH_KD	HHH_KE	HHH_KF	HHH_KG	HHH_KH	HHH_KI	HHH_KJ	HHH_KK	HHH_KL	HHH_KM	HHH_KN	HHH_KO	HHH_KP	HHH_KQ	HHH_KR	HHH_KS	HHH_KT	HHH_KU	HHH_KV	HHH_KW	HHH_KX	HHH_KY	HHH_KZ	HHH_LA	HHH_LB	HHH_LC	HHH_LD	HHH_LE	HHH_LF	HHH_LG	HHH_LH	HHH_LI	HHH_LJ	HHH_LK	HHH_LL	HHH_LM	HHH_LN	HHH_LO	HHH_LP	HHH_LQ	HHH_LR	HHH_LS	HHH_LT	HHH_LU	HHH_LV	HHH_LW	HHH_LX	HHH_LY	HHH_LZ	HHH_MA	HHH_MB	HHH_MC	HHH_MD	HHH_ME	HHH_MF	HHH_MG	HHH_MH	HHH_MI	HHH_MJ	HHH_MK	HHH_ML	HHH_MM	HHH_MN	HHH_MO	HHH_MP	HHH_MQ	HHH_MR	HHH_MS	HHH_MT	HHH_MU	HHH_MV	HHH_MW	HHH_MX	HHH_MY	HHH_MZ	HHH_NA	HHH_NB	HHH_NC	HHH_ND	HHH_NE	HHH_NF	HHH_NG	HHH_NH	HHH_NI	HHH_NJ	HHH_NK	HHH_NL	HHH_NM	HHH>NN	HHH_NO	HHH_NP	HHH_NQ	HHH_NR	HHH_NS	HHH_NT	HHH_NU	HHH_NV	HHH_NW	HHH_NX	HHH_NY	HHH_NZ	HHH_OA	HHH_OB	HHH_OC	HHH_OD	HHH_OE	HHH_OF	HHH_OG	HHH_OH	HHH_OI	HHH_OJ	HHH_OK	HHH_OL	HHH_OM	HHH_ON	HHH_OO	HHH_OP	HHH_OQ	HHH_OR	HHH_OS	HHH_OT	HHH_OU	HHH_OV	HHH_OW	HHH_OX	HHH_OY	HHH_OZ	HHH_PA	HHH_PB	HHH_PC	HHH_PD	HHH_PE	HHH_PF	HHH_PG	HHH_PH	HHH_PI	HHH_PJ	HHH_PK	HHH_PL	HHH_PM	HHH_PN	HHH_PO	HHH_PP	HHH_PQ	HHH_PR	HHH_PS	HHH_PT	HHH_PU	HHH_PV	HHH_PW	HHH_PX	HHH_PY	HHH_PZ	HHH_QA	HHH_QB	HHH_QC	HHH_QD	HHH_QE	HHH_QF	HHH_QG	HHH_QH	HHH_QI	HHH_QJ	HHH_QK	HHH_QL	HHH_QM	HHH_QN	HHH_QO	HHH_QP	HHH_QQ	HHH_QR	HHH_QS	HHH_QT	HHH_QU	HHH_QV	HHH_QW	HHH_QX	HHH_QY	HHH_QZ	HHH_RA	HHH_RB	HHH_RC	HHH_RD	HHH_RE	HHH_RF	HHH_RG	HHH_RH	HHH_RI	HHH_RJ	HHH_RK	HHH_RL	HHH_RM	HHH_RN	HHH_RO	HHH_RP	HHH_RQ	HHH_RR	HHH_RS	HHH_RT	HHH_RU	HHH_RV	HHH_RW	HHH_RX	HHH_RY	HHH_RZ	HHH_SA	HHH_SB	HHH_SC	HHH_SD	HHH_SE	HHH_SF	HHH_SG	HHH_SH	HHH_SI	HHH_SJ	HHH_SK	HHH_SL	HHH_SM	HHH_SN	HHH_SO	HHH_SP	HHH_SQ	HHH_SR	HHH_SS	HHH_ST	HHH_SU	HHH_SV	HHH_SW	HHH_SX	HHH_SY	HHH_SZ	HHH_TA	HHH_TB	HHH_TC	HHH_TD	HHH_TE	HHH_TF	HHH_TG	HHH_TH	HHH_TI	HHH_TJ	HHH_TK	HHH_TL	HHH_TM	HHH_TN	HHH_TO	HHH_TP	HHH_TQ	HHH_TR	HHH_TS	HHH_TT	HHH_TU	HHH_TV	HHH_TW	HHH_TX	HHH_TY	HHH_TZ	HHH_UA	HHH_UB	HHH_UC	HHH_UD	HHH_UE	HHH_UF	HHH_UG	HHH_UH	HHH_UI	HHH_UJ	HHH_UK	HHH_UL	HHH_UM	HHH_UN	HHH_UO	HHH_UP	HHH_UQ	HHH_UR	HHH_US	HHH_UT	HHH_UU	HHH_UV	HHH_UW	HHH_UX	HHH_UY	HHH_UZ	HHH_VA	HHH_VB	HHH_VC	HHH_VD	HHH_VE	HHH_VF	HHH_VG	HHH_VH	HHH_VI	HHH_VJ	HHH_VK	HHH_VL	HHH_VM	HHH_VN	HHH_VO	HHH_VP	HHH_VQ	HHH_VR	HHH_VS	HHH_VT	HHH_VU	HHH_VV	HHH_VW	HHH_VX	HHH_VY	HHH_VZ	HHH_WA	HHH_WB	HHH_WC	HHH_WD	HHH_WE	HHH_WF	HHH_WG	HHH_WH	HHH_WI	HHH_WJ	HHH_WK	HHH_WL	HHH_WM	HHH_WN	HHH_WO	HHH_WP	HHH_WQ	HHH_WR	HHH_WS	HHH_WT	HHH_WU	HHH_WV	HHH_WW	HHH_WX	HHH_WY	HHH_WZ	HHH_XA	HHH_XB	HHH_XC	HHH_XD	HHH_XE	HHH_XF	HHH_XG	HHH_XH	HHH_XI	HHH_XJ	HHH_XK	HHH_XL	HHH_XM	HHH_XN	HHH_XO	HHH_XP	HHH_XQ	HHH_XR	HHH_XS	HHH_XT	HHH_XU	HHH_XV	HHH_XW	HHH_XX	HHH_XY	HHH_XZ	HHH_YA	HHH_YB	HHH_YC	HHH_YD	HHH_YE	HHH_YF	HHH_YG	HHH_YH	HHH_YI	HHH_YJ	HHH_YK	HHH_YL	HHH_YM	HHH_YN	HHH_YO	HHH_YP	HHH_YQ	HHH_YR	HHH_YS	HHH_YT	HHH_YU	HHH_YV	HHH_YW	HHH_YX	HHH_YY	HHH_YZ	HHH_ZA	HHH_ZB	HHH_ZC	HHH_ZD	HHH_ZE	HHH_ZF	HHH_ZG	HHH_ZH	HHH_ZI	HHH_ZJ	HHH_ZK	HHH_ZL	HHH_ZM	HHH_ZN	HHH_ZO	HHH_ZP	HHH_ZQ	HHH_ZR	HHH_ZS	HHH_ZT	HHH_ZU	HHH_ZV	HHH_ZW	HHH_ZX	HHH_ZY	HHH_ZZ																																																																																													
27	CD2160	CD2160	64	82.813	73.438	16	5	11	-3.0	40	EE3131	EE3131	58	67.241	68.966	13	7	6	0.5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														</

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CBS	VAR90	VAR91	IRUH A	PCC-HP90	PCC-HP91	IRUHSW	IRUHFTO	IRUHTO	HSTGH	OBS	VAP90	VAP91	IRUH A	PCC-HP90	PCC-HP91	IRUHSW	IRUHFTO	IRUHTO	HSTGH
53	E83171	-	63	31.746	49.206	23	17	6	5.5	66	E82255	E82255	67	52.239	42.517	27	27	0	13.5
54	E84171	-	60	68.333	78.333	14	4	3.0	3.0	67	E82259	E82259	56	82.143	92.186	8	5	2	2.0
55	E84172	-	56	94.643	94.643	4	2	0.0	0.0	-68	E82260	E82260	1	100.000	0.000				-0.5
56	E84173	-	49	89.796	83.673	9	3	6	-1.5	69	E82263	E82263	48	79.167	85.117	13	8	5	1.5
57	E84173A	-	63	60.317	65.079	17	10	7	1.5	70	E82264	E82264	57	15.789	15.789	12	6	0	0.0
58	E84175	-	67	88.050	85.075	10	4	6	-1.0	71	E82265	E82265	40	67.500	91.500	10	10	0	5.0
59	E84176	-	65	90.769	80.000	13	3	10	-1.5	72	E83055	E83055	17	17.659	76.171	7	6	1	2.5
60	E84177	-	66	98.485	93.939	5	1	4	-1.5	73	E83136	E83136	59	24.139	46.552	27	20	7	6.5
61	E84178	-	67	88.060	89.552	5	3	2	0.5	74	E83137	E83137	33	69.697	94.618	7	7	2	2.5
62	E84179	-	67	89.552	94.030	9	6	3	1.5	75	E83138	E83138	32	59.375	81.250	11	9	2	3.5
63	E85017	-	64	45.313	43.750	13	6	7	-0.5	76	E83138A	E83138A	28	71.429	85.711	6	5	1	2.0
64	E85019	-	67	4.478	8.955	7	.5	2	1.5	77	E83140	E83140	64	18.438	76.563	20	13	1	9.0
65	E82253	-	63	19.048	79.365	42	40	2	19.0	78	E83141	E83141	21	0.000	3.524	2	3	0	1.0
CBS	PSIGH	HLI_HL_DL	PC90_L	PC91_L	PC90_DL	PC91_DL	IRUHSW L	SUPC_L	SUPC_L	OBS	PSIGH	HLI_HL_DL	PC90_L	PC91_L	PC90_DL	PC91_DL	IRUHSW L	SUPC_L	SUPC_L
53	0.03469	35	28	37.143	54.286	25.000	42.857	14	71.429	66	0.00000	38	29	55.263	100.000	19.276	82.753	17	100.000
54	0.17957	32	28	78.125	75.000	57.143	82.143	5	40.000	67	0.28905	31	22	79.112	85.231	96.364	95.435	1	75.000
55	1.00000	35	24	93.750	93.750	95.833	95.833	2	50.000	68	1.00000			0.000	0.000	100.000	0.000	0	0.000
56	0.50781	32	24	92.000	88.000	87.500	79.167	5	40.000	69	0.58105	31	17	77.419	87.097	82.153	82.153	3	66.667
57	0.62906	35	28	62.857	65.714	57.143	64.286	11	54.545	70	0.10000	36	21	16.667	19.111	11.586	9.511	3	55.556
58	0.73591	38	29	84.211	83.333	93.103	86.207	7	50.000	71	0.00195	24	16	79.167	95.833	50.500	87.500	1	100.000
59	0.92929	36	29	91.667	89.555	75.862	75.862	7	28.571	72	0.12500	9	8	55.556	77.778	37.500	75.000	1	75.000
60	0.37500	37	29	97.297	100.000	100.000	86.207	1	100.000	73	0.01916	34	11	20.588	51.341	23.197	37.500	15	66.667
61	1.00000	38	29	89.174	86.842	86.207	93.103	3	33.333	74	0.17969	21	12	61.305	80.252	81.333	91.667	8	75.000
62	0.50781	37	29	86.842	92.105	93.103	96.562	8	62.500	75	0.06543	21	11	57.143	80.952	63.616	81.818	7	85.714
63	1.00000	38	29	61.865	51.351	18.519	33.333	9	22.222	76	0.21875	17	11	70.588	82.353	72.727	90.909	2	100.000
64	0.45313	38	29	2.632	10.526	6.897	6.897	3	100.000	77	0.00004	36	28	44.144	72.222	53.571	82.113	12	91.667
65	0.00000	36	27	19.141	77.778	18.519	81.481	25	92.000	78	0.56000	11	10	0.000	9.000	0.000	16.000	1	100.000
CBS	IRUHSW_DL	SUPC_DL	P25MHAC	DELTA2	DELTA_L	DELTA_DL	OBS	IRUHSW_HL	SUPC_HL	P25MHAC	DELTA_HL	DELTA_DL	DELTA_HL	P25MHAC	DELTA_HL	DELTA_DL	DELTA_HL	DELTA_HL	DELTA_HL
53	9	77.778	0.96062	-0.00714	0.17113	0.17857	66	100.000	0.39112	0.12531	0.41737	0.41737	0.34183	0.39112	0.41737	0.41737	0.34183	0.34183	0.34183
54	9	88.889	0.01786	-0.28125	-0.03125	0.25000	67	1	0.76224	0.35000	0.35000	0.35000	0.35000	0.76224	0.35000	0.35000	0.35000	0.35000	0.35000
55	2	50.000	0.00000	0.00000	0.00000	0.00000	68	1	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620	0.620
56	4	25.000	0.71979	0.04333	-0.04333	-0.08333	69	1	0.50000	0.50000	0.50000	0.50000	0.50000	0.50000	0.50000	0.50000	0.50000	0.50000	0.50000
57	6	66.667	0.71809	-0.04286	0.02857	0.07143	70	3	0.32253	0.32253	0.32253	0.32253	0.32253	0.32253	0.32253	0.32253	0.32253	0.32253	0.32253
58	4	25.000	0.46089	0.06897	0.00000	-0.06897	71	6	0.51821	0.51821	0.51821	0.51821	0.51821	0.51821	0.51821	0.51821	0.51821	0.51821	0.51821
59	6	16.667	0.81353	0.05460	-0.08333	-0.13793	72	3	0.14502	0.14502	0.14502	0.14502	0.14502	0.14502	0.14502	0.14502	0.14502	0.14502	0.14502
60	4	0.000	0.01735	0.16496	-0.02703	-0.13793	73	12	0.57237	0.57237	0.57237	0.57237	0.57237	0.57237	0.57237	0.57237	0.57237	0.57237	0.57237
61	2	100.000	0.11497	-0.09528	-0.02632	0.06897	74	1	0.16861	0.16861	0.16861	0.16861	0.16861	0.16861	0.16861	0.16861	0.16861	0.16861	0.16861
62	1	100.000	0.82343	0.18815	0.05263	0.03448	75	1	0.47775	0.47775	0.47775	0.47775	0.47775	0.47775	0.47775	0.47775	0.47775	0.47775	0.47775
63	4	100.000	0.00610	-0.28328	-0.13514	0.14815	76	1	0.78661	0.78661	0.78661	0.78661	0.78661	0.78661	0.78661	0.78661	0.78661	0.78661	0.78661
64	4	50.000	0.13371	0.07895	-0.07895	0.00000	77	8	0.71576	0.71576	0.71576	0.71576	0.71576	0.71576	0.71576	0.71576	0.71576	0.71576	0.71576
65	17	100.000	0.73310	-0.01630	0.58333	0.62963	78	1	0.41166	0.41166	0.41166	0.41166	0.41166	0.41166	0.41166	0.41166	0.41166	0.41166	0.41166

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GBS	VAR90	VAR91	INH_A	PCORP90	PCORP91	INHSW	INHSW_TO	INHSW_L	SHRFL_L	GBS	PSIGH	H_L	H_DL	PC90_L	PC91_L	PC90_DL	PC91_DL	INHSW_L	SHRFL_L	GBS	VAR90	VAR91	INH_A	PCORP90	PCORP91	INHSW	INHSW_TO	INHSW_L	SHRFL_L	GBS	PSIGH	H_L	H_DL	PC90_L	PC91_L	PC90_DL	PC91_DL	INHSW_L	SHRFL_L		
105	ES4045	ES4045	64	95.313	96.875	5	3	2	0.5	118	ES4060	ES4060	40	75.000	100.000	100.000	100.000	100.000	100.000	100.000	105	ES4045	ES4045	64	95.313	96.875	5	3	2	0.5	118	ES4060	ES4060	40	75.000	100.000	100.000	100.000	100.000	100.000	100.000
106	ES4046	ES4046	67	91.045	94.030	6	4	2	1.0	119	ES4061	ES4061	41	37.561	100.000	100.000	100.000	100.000	100.000	100.000	106	ES4046	ES4046	67	91.045	94.030	6	4	2	1.0	119	ES4061	ES4061	41	37.561	100.000	100.000	100.000	100.000	100.000	100.000
107	ES4047	ES4047	65	75.385	83.077	15	10	5	2.5	120	ES4062	ES4062	42	96.970	96.970	96.970	96.970	96.970	96.970	96.970	107	ES4047	ES4047	65	75.385	83.077	15	10	5	2.5	120	ES4062	ES4062	42	96.970	96.970	96.970	96.970	96.970	96.970	96.970
108	ES4047A	ES4047A	66	74.242	84.848	15	11	4	3.5	121	ES4063	ES4063	43	90.625	93.750	93.750	93.750	93.750	93.750	93.750	108	ES4047A	ES4047A	66	74.242	84.848	15	11	4	3.5	121	ES4063	ES4063	43	90.625	93.750	93.750	93.750	93.750	93.750	93.750
109	ES4048	ES4048	61	88.525	96.721	9	7	2	2.5	122	ES4064	ES4064	44	86.364	98.485	98.485	98.485	98.485	98.485	98.485	109	ES4048	ES4048	61	88.525	96.721	9	7	2	2.5	122	ES4064	ES4064	44	86.364	98.485	98.485	98.485	98.485	98.485	98.485
110	ES4049	ES4049	67	87.015	95.522	10	7	3	2.0	123	ES4065	ES4065	45	71.191	51.613	51.613	51.613	51.613	51.613	51.613	110	ES4049	ES4049	67	87.015	95.522	10	7	3	2.0	123	ES4065	ES4065	45	71.191	51.613	51.613	51.613	51.613	51.613	51.613
111	ES4051	ES4051	66	98.485	96.970	5	2	3	-0.5	124	ES4066	ES4066	46	77.113	71.191	71.191	71.191	71.191	71.191	71.191	111	ES4051	ES4051	66	98.485	96.970	5	2	3	-0.5	124	ES4066	ES4066	46	77.113	71.191	71.191	71.191	71.191	71.191	71.191
112	ES4052	ES4052	66	72.727	78.788	18	11	7	2.0	125	ES4067	ES4067	47	100.000	91.872	91.872	91.872	91.872	91.872	91.872	112	ES4052	ES4052	66	72.727	78.788	18	11	7	2.0	125	ES4067	ES4067	47	100.000	91.872	91.872	91.872	91.872	91.872	91.872
113	ES4055	ES4055	18	33.333	66.667	8	7	1	3.0	126	ES4110	ES4110	53	98.113	100.000	100.000	100.000	100.000	100.000	100.000	113	ES4055	ES4055	18	33.333	66.667	8	7	1	3.0	126	ES4110	ES4110	53	98.113	100.000	100.000	100.000	100.000	100.000	100.000
114	ES4057	ES4057	14	100.000	100.000	0	0	0	0.0	127	ES4111	ES4111	50	98.000	96.000	96.000	96.000	96.000	96.000	96.000	114	ES4057	ES4057	14	100.000	100.000	0	0	0	0.0	127	ES4111	ES4111	50	98.000	96.000	96.000	96.000	96.000	96.000	96.000
115	ES4058	ES4058	43	48.837	55.116	15	11	4	3.5	128	ES4112	ES4112	61	95.082	96.721	96.721	96.721	96.721	96.721	96.721	115	ES4058	ES4058	43	48.837	55.116	15	11	4	3.5	128	ES4112	ES4112	61	95.082	96.721	96.721	96.721	96.721	96.721	96.721
116	ES4059	ES4059	41	88.636	90.909	1	1	0	0.5	129	ES4114	ES4114	46	95.652	95.652	95.652	95.652	95.652	95.652	95.652	116	ES4059	ES4059	41	88.636	90.909	1	1	0	0.5	129	ES4114	ES4114	46	95.652	95.652	95.652	95.652	95.652	95.652	95.652
117	ES4059	ES4059	41	88.636	90.909	1	1	0	0.5	130	ES4115	ES4115	40	92.500	92.500	92.500	92.500	92.500	92.500	92.500	117	ES4059	ES4059	41	88.636	90.909	1	1	0	0.5	130	ES4115	ES4115	40	92.500	92.500	92.500	92.500	92.500	92.500	92.500
118	ES4059	ES4059	41	88.636	90.909	1	1	0	0.5	130	ES4115	ES4115	40	92.500	92.500	92.500	92.500	92.500	92.500	92.500	118	ES4059	ES4059	41	88.636	90.909	1	1	0	0.5	130	ES4115	ES4115	40	92.500	92.500	92.500	92.500	92.500	92.500	92.500

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OBS	VAR90	VAR91	NUM_A	PC90P90	PC90P91	NUMSH	NUMK370	NUMHTO	HSIGN	OBS	VAR90	VAR91	NUM_A	PC90P90	PC90P91	NUMSH	NUMHTO	NUMHTO	HSIGN	
131	ES4118	ES4118	59	89.831	94.915	7	5	2	1.5	144	ES4182	ES4182	49	100.000	93.878	3	0	3	-1.5	
132	ES4119	ES4119	64	84.375	95.313	7	7	0	3.5	145	ES4183	ES4183	39	61.538	76.923	8	7	1	3.0	
133	ES4120	ES4120	39	92.308	82.051	8	2	6	-2.0	146	ES4184	ES4184	28	85.711	85.711	4	2	2	0.0	
134	ES4121	ES4121	58	94.828	94.828	4	2	2	0.0	147	ES4185	ES4185	30	90.000	86.567	5	2	3	-0.5	
135	ES4125	ES4125	49	93.878	93.878	4	2	2	0.0	148	ES4186	ES4186	41	90.244	90.244	6	3	3	0.0	
136	ES4126	ES4126	52	94.231	96.154	3	2	1	0.5	149	ES4190	ES4190	57	68.421	75.439	12	8	4	2.0	
137	ES4128	ES4128	52	67.308	82.692	18	13	5	4.0	150	ES4192	ES4192	65	81.615	92.308	11	8	3	2.5	
138	ES4156	ES4156	35	94.286	100.000	2	2	0	1.0	151	ES4194	ES4194	63	88.889	82.540	16	6	10	-2.0	
139	ES4159	ES4159	62	80.645	75.806	17	7	10	-1.5	152	ES4196	ES4196	66	90.909	92.424	7	4	3	0.5	
140	ES4160	ES4160	64	92.188	81.250	15	4	11	-3.5	153	ES4197	ES4197	65	80.000	81.615	17	10	7	1.5	
141	ES4165	ES4165	52	84.615	90.385	9	6	3	1.5	154	ES4199	ES4199	64	82.813	81.250	13	6	7	-0.5	
142	ES4170	ES4170	60	78.333	86.567	13	9	4	2.5	155	ES4201	ES4201	67	98.507	95.522	4	1	3	-1.0	
143	ES4181	ES4181	48	100.000	95.833	2	0	2	-1.0	156	ES4202	ES4202	29	89.655	86.207	5	2	3	-0.5	
The SAS System 16:31 Monday, September 13, 1993																				
OBS	PSIGN	H.L.	H.DL	PC90_L	PC91_L	PC90_DL	PC91_DL	NUMSH_L	SHPC_L	OBS	PSIGN	H.L.	H.DL	PC90_L	PC91_L	PC90_DL	PC91_DL	NUMSH_L	SHPC_L	
131	0.45313	35	24	97.143	100.000	79.167	87.500	1	100.000	144	0.25000	23	20	100.000	96.552	100.000	90.000	1	0.000	
132	0.01563	36	28	91.667	97.222	75.000	92.857	2	100.000	145	0.07031	23	16	60.870	69.555	62.500	87.500	4	75.000	
133	0.28906	25	14	92.000	80.600	92.857	85.714	5	20.000	146	1.00000	19	9	94.737	89.474	65.667	77.778	1	0.000	
134	1.00000	33	25	93.939	96.970	96.000	92.000	3	66.567	147	1.00000	19	11	94.737	84.211	81.818	90.909	4	25.000	
135	1.00000	27	22	96.296	92.593	90.909	95.435	3	33.333	148	1.00000	23	18	95.652	86.957	83.333	94.444	4	25.000	
136	1.00000	29	23	96.552	93.103	91.304	100.000	1	0.000	149	0.38770	32	25	71.875	75.000	64.000	76.000	7	57.143	
137	0.09625	30	22	63.333	80.000	72.727	88.364	13	69.231	150	0.22556	37	28	83.784	94.595	85.714	89.286	8	75.000	
138	0.50000	19	16	94.737	100.000	93.750	100.000	1	100.000	151	0.45450	35	28	85.714	82.857	92.857	92.857	9	44.444	
139	0.62906	35	27	82.857	80.000	77.778	70.370	9	44.444	152	1.00000	37	29	91.892	91.892	89.555	93.103	6	50.000	
140	0.11847	36	28	88.889	80.556	96.429	82.113	11	36.364	153	0.62906	36	29	83.333	77.778	75.862	93.103	10	40.000	
141	0.50781	32	20	81.250	93.750	90.000	85.000	6	83.333	154	1.00000	35	29	82.857	77.143	82.759	86.207	6	33.333	
142	0.26685	35	25	74.286	80.000	84.000	96.000	10	60.000	155	0.62500	38	29	97.368	92.105	100.000	100.000	4	25.000	
143	0.50000	27	21	100.000	96.296	100.000	95.238	1	0.000	156	1.00000	15	14	86.667	80.000	92.857	92.857	3	33.333	
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OBS	NUMSH_DL	SHPC_DL	P2SANNAC	DELTA2	DELTA_L	DELTA_DL					NUMSH_DL	SHPC_DL	P2SANNAC	DELTA2	DELTA_L	DELTA_DL				
131	6	66.667	0.60025	-0.05476	0.02857	0.08373					2	0.000	0.38333	0.06552	-0.03448	-0.10000				
132	5	100.000	0.13276	-0.12302	0.05556	0.17857					4	100.000	0.23627	-0.16304	0.08696	0.25000				
133	3	33.333	0.74535	-0.04857	-0.01743	-0.07143					3	66.667	0.40271	-0.16374	-0.05263	0.11111				
134	1	0.000	0.28159	0.07030	0.03030	-0.04000					1	100.000	0.14381	-0.19617	-0.10526	0.09091				
135	1	100.000	0.28836	-0.08249	-0.03704	0.04545					2	100.000	0.07905	-0.19807	-0.08696	0.11111				
136	2	100.000	0.07337	-0.12144	-0.03148	0.08696					5	80.000	0.45687	-0.08875	0.03125	0.12000				
137	5	80.000	0.84164	0.03030	0.16667	0.13636					3	66.667	0.45305	0.07239	0.10811	0.03571				
138	1	100.000	0.90095	-0.00987	0.05263	0.06250					7	28.571	0.53246	0.07857	-0.03857	-0.10714				
139	8	37.500	0.73516	0.04550	-0.02857	-0.07407					1	100.000	0.64289	-0.03418	0.06500	0.03148				
140	4	0.000	0.59690	0.05952	-0.08333	-0.14286					7	85.714	0.06207	-0.22797	-0.02556	0.17241				
141	3	33.333	0.12113	0.17500	0.12500	-0.05000					7	57.143	0.42317	-0.03163	-0.05714	-0.03448				
142	3	100.000	0.57078	-0.06286	0.05714	0.12000					0	0.000	0.31086	-0.05263	-0.05263	0.00000				
143	1	0.000	0.85755	0.01058	-0.03704	-0.04762					2	50.000	0.66183	-0.06667	-0.06667	0.00000				

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OBS	VAR90	VAR91	NUM_A	PCOMP90	PCOMP91	HUMSW	HUMGT0	HUMHT0	HSIGH	OBS	VAR90	VAR91	NUM_A	PCOMP90	PCOMP91	HUMSW	HUMGT0	HUMHT0	HSIGH
157	ES4216	ES4216	55	89.091	90.909	11	6	5	0.5	170	FA2241	FA2241	67	91.045	25.373	44	0	44	-22.0
158	ES4217	ES4217	47	93.617	91.617	6	3	3	0.0	171	FA4130	FA4130	67	85.075	94.030	8	7	1	3.0
159	ES4218	ES4218	47	78.723	87.234	14	9	5	2.0	172	FA4131	FA4131	66	100.000	100.000	0	0	0	0.5
160	ES4219	ES4219	56	80.357	82.143	13	7	6	0.5	173	FA4132	FA4132	66	95.455	96.970	5	3	2	0.5
161	ES4220	ES4220	55	98.182	90.909	4	0	4	-2.0	174	FA4133	FA4133	65	92.308	90.769	9	4	5	-0.5
162	ES4221	ES4221	53	90.566	94.340	6	4	2	1.0	175	FA4134	FA4134	65	95.385	98.462	4	3	1	1.0
163	ES4222	ES4222	25	40.000	60.000	13	9	4	2.5	176	FA4135	FA4135	66	95.455	96.970	3	2	1	0.5
164	ES4223	ES4223	36	94.444	94.444	2	1	1	0.0	177	FA4136	FA4136	64	71.875	96.875	18	17	1	8.0
165	ES4224	ES4224	41	82.927	87.805	12	7	5	1.0	178	FA4137	FA4137	66	31.818	45.455	21	15	6	4.5
166	ES4225	ES4225	43	53.488	69.767	15	11	3	3.5	179	FA4138	FA4138	66	93.939	92.424	5	2	3	-0.5
167	ES4226	ES4226	56	91.071	94.643	8	5	3	1.0	180	FA4139	FA4139	61	70.313	73.138	20	11	9	1.0
168	ES4227	ES4227	54	98.148	77.778	13	1	12	-5.5	181	FA4140	FA4140	64	89.063	96.875	7	6	1	2.5
169	ES4228	ES4228	3	100.000	100.000	0	0	0	0.000	182	FA4141	FA4141	62	96.774	98.387	3	2	1	0.5
157	PSIGH	U_L	U_DL	PC90_L	PC91_L	PC90_DL	PC91_DL	HUMSW_L	SVPC_L	OBS	PSIGH	U_L	U_DL	PC90_L	PC91_L	PC90_DL	PC91_DL	HUMSW_L	SVPC_L
157	1.00000	33	22	87.879	90.909	90.909	90.909	90.909	57.143	170	0.00000	38	29	94.737	31.579	86.207	17.241	24	0.000
158	1.00000	28	19	92.857	92.857	94.737	94.737	94.737	50.000	171	0.07031	38	29	84.211	94.737	86.207	93.103	4	100.000
159	0.42395	27	20	74.074	92.593	85.000	80.000	80.000	77.778	172	1.00000	5	3	100.000	100.000	100.000	100.000	0	0.000
160	1.00000	34	22	79.412	82.353	81.818	81.818	81.818	60.000	173	1.00000	38	28	97.368	97.368	92.857	96.429	2	50.000
161	0.12500	33	22	96.970	84.848	100.000	100.000	100.000	0.000	174	1.00000	37	28	89.189	86.486	96.429	96.429	7	42.857
162	0.68750	32	21	87.500	93.750	95.238	95.238	95.238	75.000	175	0.02500	37	28	97.297	97.297	92.857	100.000	2	50.000
163	0.26685	17	8	41.176	58.824	37.500	62.500	62.500	66.667	176	1.00000	38	28	94.737	94.737	96.429	100.000	2	50.000
164	1.00000	21	15	95.238	95.238	93.333	93.333	93.333	50.000	177	0.00000	36	28	61.111	160.000	85.714	92.857	14	100.000
165	0.77441	23	18	73.913	95.652	94.444	77.778	77.778	85.714	178	0.07815	38	28	31.579	44.747	32.143	46.429	11	72.727
166	0.11847	22	21	63.636	72.727	42.857	66.667	66.667	62.500	179	1.00000	38	28	92.105	94.737	96.429	89.286	3	66.667
167	0.72656	33	23	90.909	90.909	91.304	100.000	100.000	50.000	180	0.82380	36	28	69.414	75.000	71.429	71.429	12	58.333
168	0.00342	33	21	96.970	75.758	100.000	80.952	80.952	11.111	181	0.12500	37	27	94.595	97.297	81.481	96.296	3	66.667
169	-	2	1	100.000	100.000	100.000	100.000	100.000	0.000	182	1.00000	34	28	100.000	100.000	92.857	96.429	0	0.000
OBS	HUMSW_DL	SVPC_DL	DELTA2	DELTA_L	DELTA_DL	OBS	HUMSW_DL	SVPC_DL	DELTA2	DELTA_L	DELTA_DL								
157	4	50.000	0.80240	0.03030	0.00000	170	20	0.000	0.61724	0.035808	-0.63158								
158	2	50.000	1.00000	0.00000	0.00000	171	4	75.000	0.66599	0.03630	0.10526								
159	5	40.000	0.12459	0.23519	0.18519	172	0	0.000	0.00000	0.00000	0.00000								
160	8	50.000	0.83852	0.02941	0.02941	173	3	66.667	0.61926	-0.63571	0.00560								
161	0	0.000	0.03289	-0.12121	-0.12121	174	2	50.000	0.75723	-0.65000	0.03571								
162	2	50.000	0.49320	0.06250	0.06250	175	2	100.000	0.24841	-0.02703	0.00000								
163	4	75.000	0.73972	-0.07353	0.17647	176	1	100.000	0.18492	-0.07143	0.00000								
164	0	0.000	1.00000	0.00000	0.00000	177	4	75.000	0.00110	0.03571	0.00000								
165	5	20.000	0.01528	0.38406	0.21739	178	10	70.000	0.00310	0.31746	0.00000								
166	7	85.714	0.39008	-0.14719	0.09091	179	2	0.000	0.91511	0.61129	0.00000								
167	2	100.000	0.35832	-0.08696	0.00000	180	8	50.000	0.11187	0.03774	0.00000								
168	4	0.000	0.85608	-0.02165	-0.21212	181	1	100.000	0.68982	0.05556	0.00000								
169	0	0.000	0.00000	0.00000	0.00000	182	1	66.667	0.11122	0.00000	0.00000								

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GDS		VAR90		VAR91		INH_A		PCOMP90		PCOMP91		HUKSW		HUKSTO		HUKHLO		HSTGH											
		HP31_		HP32_		HP33_		HP34_		HP35_		HP36_		HP37_		HP38_		HP39_											
213	213	65	6.1538	15.385	8	7	1	3.0																					
214	HP31_	63	0.0000	12.698	8	8	0	4.0																					
215	HP32_	63	3.1745	15.973	10	9	1	4.0																					
216	HP33_	67	16.1179	16.418	18	9	9	0.0																					
217	HP34_	66	12.1212	15.152	10	6	4	1.0																					
218	HP35_	65	4.6154	18.462	11	10	1	4.5																					
219	HP36_	65	7.6923	18.462	15	11	4	3.5																					
220	HP37_	67	13.4328	14.925	11	6	5	0.5																					
221	HP38_	67	7.4627	11.940	11	7	4	1.5																					
222	HP39_	65	4.6154	10.769	10	7	3	2.0																					
223	HP40_	67	1.4925	11.940	9	8	1	3.5																					
224	HP41_	62	12.9032	17.742	9	6	3	1.5																					
225	HP42_	64	4.5875	17.188	12	10	2	4.0																					
226	HP43_																												
GDS		PSTGH		H_L		H_DL		PC90_L		PC91_L		PC90_DL		PC91_DL		HUKSH_L		SWPC_L											
213	213	0.07031	37	28	10.8108	24.324	0.000	3.571	7	85.714																			
214	214	0.00781	35	28	0.0000	17.143	0.000	7.143	6	100.000																			
215	215	0.02148	35	28	5.7113	20.000	0.000	10.714	7	85.714																			
216	216	1.00000	38	29	10.5263	21.053	24.138	10.345	10	70.000																			
217	217	0.03991	37	28	5.4054	13.514	20.690	17.241	8	87.500																			
218	218	0.01172	37	28	2.7027	18.919	7.143	17.857	10	80.000																			
219	219	0.11847	36	29	8.3333	25.000	6.897	10.345	6	50.000																			
220	220	1.00000	38	29	18.4211	18.421	6.897	10.345	6	50.000																			
221	221	0.54883	38	29	7.8947	15.789	6.897	6.897	9	66.667																			
222	222	0.34375	36	29	2.7778	16.667	6.897	3.448	7	85.714																			
223	223	0.03906	38	29	2.6316	15.789	0.000	6.897	7	85.714																			
224	224	0.50781	33	29	12.1212	18.182	13.793	17.241	4	75.000																			
225	225	0.03857	16	28	2.7778	22.222	7.143	10.714	9	88.889																			
GDS		INHSHV_DL		SWPC_DL		PSASHHK		DELTA2		DELTA_L		DELTA_DL		DELTA_DL		DELTA_DL		DELTA_DL											
213	213	1	100.000	0.19363	0.09942	0.10000	0.13514	0.03571	0.03571																				
214	214	2	160.000	0.21227	0.12227	0.10000	0.17143	0.07143	0.07143																				
215	215	3	100.000	0.69928	0.03571	0.10000	0.14286	0.10714	0.10714																				
216	216	8	25.000	0.05070	0.24319	0.24319	0.10526	-0.13793	-0.13793																				
217	217	5	40.000	0.23276	0.11556	0.11556	0.08108	0.03448	0.03448																				
218	218	3	100.000	0.55182	0.05502	0.05502	0.16216	0.10714	0.10714																				
219	219	5	60.000	0.24356	0.13218	0.13218	0.16667	0.03448	0.03448																				
220	220	5	60.000	0.73099	-0.03448	0.00000	0.00000	0.03448	0.03448																				
221	221	2	50.000	0.39034	0.07895	0.07895	0.13889	0.06000	0.06000																				
222	222	3	33.333	0.05841	0.17337	0.17337	0.13889	-0.03448	-0.03448																				
223	223	2	100.000	0.44109	0.06261	0.06261	0.13158	0.06897	0.06897																				
224	224	5	50.000	0.78832	0.02612	0.02612	0.08061	0.03448	0.03448																				
225	225	3	55.567	0.10459	0.15873	0.15873	0.03571	0.03571	0.03571																				

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CBS	VAR90	VAR91	INHA_A	PC90P90	PC90P91	INHSW	HUNGTO	HUMHTO	HSHG	CBS	VAR90	VAR91	INHA_A	PC90P90	PC90P91	INHSW	HUNGTO	HUMHTO	HSHG
P12199	P12199	P12199	65	80.000	78.462	17	8	9	-0.5	278	P12220	P12220	67	61.1731	71.9419	21	13	5	1.5
P12200	P12200	P12200	66	100.000	96.970	2	0	2	-1.0	279	P12221	P12221	67	73.1045	89.5522	13	13	6	3.5
P12201	P12201	P12201	63	90.476	92.063	7	4	3	0.5	280	P12222	P12222	67	71.6418	81.5821	14	11	3	4.0
P12202	P12202	P12202	45	62.222	84.444	10	10	0	5.0	281	P12223	P12223	67	85.0746	97.0149	10	9	1	1.0
P12203	P12203	P12203	65	100.000	100.000	0	0	0	0	282	P12224	P12224	67	91.0448	91.0299	8	5	3	1.0
P12204	P12204	P12204	67	98.507	95.522	2	0	2	-1.0	283	P12225	P12225	67	83.5821	89.5522	12	8	1	2.0
P12205	P12205	P12205	64	100.000	100.000	0	0	0	0	284	P12226	P12226	67	88.0597	73.1345	11	4	10	3.0
P12206	P12206	P12206	58	87.931	98.276	8	7	1	3.0	285	P12227	P12227	67	73.1343	65.6716	23	3	11	-2.5
P12207	P12207	P12207	63	96.825	100.000	2	2	0	0	286	P12228	P12228	67	11.5251	22.3881	15	10	5	2.5
P12208	P12208	P12208	67	97.015	98.507	3	2	1	0.5	287	P12229	P12229	67	55.2239	47.7612	19	7	12	-2.5
P12209	P12209	P12209	62	82.258	91.935	10	8	2	3.0	288	P12230	P12230	67	67.1642	71.6269	25	15	10	2.5
P12210	P12210	P12210	65	98.462	98.462	2	1	1	0.0	289	P12231	P12231	67	86.5672	82.0836	13	5	8	-1.5
P12211	P12211	P12211	62	77.419	91.935	13	11	2	1.5	290	P12232	P12232	67	73.1343	61.1940	28	10	18	1.0
CBS	PSIGH	H.L.	H.DL	PC91_L	PC90_DL	PC91_DL	HUNSW_L	SUPC_L	CBS	PSIGH	H.L.	H.DL	PC90_L	PC91_L	PC90_DL	PC91_DL	HUNSW_L	SUPC_L	
265	1.00000	36	29	75.000	80.556	86.207	75.862	66.667	278	0.38331	38	29	60.5253	68.4211	68.9555	75.862	11	63.636	
266	0.50000	37	29	100.000	94.595	100.000	100.000	0.000	279	0.16707	38	29	78.3474	81.5789	79.3103	100.000	13	53.846	
267	1.00000	38	25	94.737	91.737	84.000	88.000	0.000	280	0.05737	38	29	81.5789	91.7368	58.6207	68.955	7	85.714	
268	0.00175	27	18	51.852	81.181	77.778	88.889	0.000	281	0.02148	38	29	86.8121	91.7368	8.7368	160.000	5	80.000	
269	0.50000	36	29	100.000	100.000	100.000	100.000	0.000	282	0.72556	38	29	86.8121	92.1053	96.5517	96.552	6	66.667	
270	0.50000	36	29	100.000	97.368	96.552	93.103	0.000	283	0.38770	38	29	78.3474	89.4737	83.6552	83.655	8	75.000	
271	0.50000	36	28	100.000	100.000	100.000	100.000	0.000	284	0.17957	38	29	89.4737	81.5789	86.2069	75.862	7	28.571	
272	0.07031	34	24	85.294	97.059	91.667	100.000	83.333	285	0.40487	38	29	76.3158	76.3158	68.9555	51.721	10	50.000	
273	0.50000	36	27	97.222	100.000	96.296	100.000	0.000	286	0.30176	38	29	18.4211	26.3158	10.3119	17.241	11	63.636	
274	1.00000	38	29	100.000	97.368	93.103	100.000	0.000	287	0.35928	38	29	50.0000	44.7368	62.0690	51.721	8	37.500	
275	0.10938	36	26	83.333	88.889	80.769	96.152	75.000	288	0.42436	38	29	65.7895	73.6842	68.9555	75.862	15	60.000	
276	1.00000	36	29	100.000	97.222	96.552	100.000	0.000	289	0.58105	38	29	86.8121	86.8121	86.2069	75.862	6	50.000	
277	0.02216	34	28	79.412	91.176	75.000	92.857	83.333	290	0.18493	38	29	76.3158	65.7895	68.9555	55.172	16	37.500	
CBS	INHSW_DL	SUPC_DL	DELTA_L	DELTA2	DELTA_DL	DELTA_L	DELTA_L	DELTA_DL	CBS	INHSW_DL	SUPC_DL	DELTA_L	DELTA2	DELTA_DL	DELTA_L	DELTA_L	DELTA_DL		
265	11	36.364	0.15900	-0.05556	0.05556	0.05556	-0.10345	0.05556	278	10	60.000	0.94254	0.03998	0.07895	0.07895	0.06897			
266	0	0.000	-0.05405	-0.05405	-0.05405	-0.05405	0.00000	0.00000	279	6	100.000	0.13562	-0.18058	0.02332	0.02332	0.20690			
267	5	60.000	-0.04000	0.00000	0.00000	0.00000	0.00000	0.00000	280	7	71.429	0.02813	0.02813	0.13158	0.13158	0.10345			
268	2	100.000	0.18519	0.29630	0.29630	0.29630	0.11111	0.11111	281	5	100.000	0.30255	-0.02347	0.07895	0.07895	0.17241			
269	0	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	282	2	50.000	0.51259	0.05263	0.05263	0.05263	0.00000			
270	1	0.000	0.00817	-0.02632	-0.02632	-0.02632	-0.03448	-0.03448	283	4	50.000	0.23263	0.10526	0.10526	0.10526	0.00000			
271	0	0.000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	284	7	28.571	0.82747	0.02450	-0.07895	-0.07895	0.10345			
272	2	100.000	0.03431	0.11765	0.11765	0.11765	0.08333	0.08333	285	13	30.769	0.23810	0.17241	0.05600	0.05600	0.17241			
273	1	100.000	-0.00926	0.02778	0.02778	0.02778	0.03704	0.03704	286	4	75.000	0.92753	0.05998	0.07895	0.07895	0.06897			
274	2	100.000	-0.09528	-0.02632	-0.02632	-0.02632	0.05897	0.05897	287	11	36.364	0.75624	0.05682	-0.05682	-0.05682	0.10345			
275	6	83.333	-0.09829	0.05556	0.05556	0.05556	0.15385	0.15385	288	10	60.000	0.94628	0.00998	0.07895	0.07895	0.06897			
276	1	100.000	-0.06226	-0.02778	-0.02778	-0.02778	0.03448	0.03448	289	7	28.571	0.31718	0.10345	0.10345	0.10345	0.10345			
277	7	85.714	-0.06092	0.11765	0.11765	0.11765	0.17857	0.17857	290	12	33.333	0.83435	0.03267	-0.10526	-0.10526	0.13733			

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CBS	VAR90	VAR91	INHLA	PCOMP90	PCOMP91	HHHSH	HHHSTO	HHHITO	HSIGH	CBS	VAR90	VAR91	INHLA	PCOMP90	PCOMP91	HHHSH	HHHSTO	HHHITO	HSIGH	CBS
291	PC3038	PC3038	67	59.701	76.119	23	17	6	5.5	304	PC3051	PC3051	67	70.149	76.119	20	12	8		
292	PC3039	PC3039	67	62.687	79.104	23	17	6	5.5	305	PC3052	PC3052	67	38.895	41.194	27	21	6		
293	PC3040	PC3040	64	70.313	71.875	21	11	10	0.5	306	PC3053	PC3053	67	65.672	71.875	22	13	9		
294	PC3041A	PC3041A	67	61.194	61.194	22	11	11	0.0	307	PC3054	PC3054	67	79.365	87.303	21	15	9		
295	PC3042A	PC3042A	67	38.806	47.761	28	17	11	3.0	308	SH2148	SH2148	63	79.365	87.303	21	15	9		
296	PC3043A	PC3043A	67	51.731	58.209	29	16	13	1.5	309	SH2149	SH2149	65	66.151	76.923	17	12	5		
297	PC3044A	PC3044A	65	33.846	41.538	21	13	8	2.5	310	SH2150A	SH2150A	67	73.131	86.957	21	15	6		
298	PC3045A	PC3045A	66	36.364	45.455	26	16	10	3.0	311	SH3032	SH3032	61	92.188	92.188	6	3	3		
299	PC3046A	PC3046A	64	17.188	23.438	10	7	3	2.0	312	SH3033	SH3033	64	84.375	85.063	19	6	12		
300	PC3047A	PC3047A	64	39.063	51.563	26	17	9	4.0	313	SH3034	SH3034	64	76.563	83.063	12	10	2		
301	PC3048A	PC3048A	67	58.203	48.269	26	9	17	-4.0	314	SH3035	SH3035	63	66.667	84.127	25	18	7		
302	PC3049	PC3049	67	77.512	50.746	32	7	25	-9.0	315	SH3036	SH3036	64	82.813	79.688	16	7	9		
303	PC3050	PC3050	67	77.512	65.672	26	9	17	-4.0	316	SH3037	SH3037	64	32.813	37.503	25	14	11		
CBS	PSIGH	U.L.	H.DL	PC90_L	PC91_L	PC90_DL	PC91_DL	HHHSH	L	SWPC_L	HHHSH_DL	SWPC_DL	P2SAMMA2	DELTA2	DELTA_L	DELTA_DL				
291	0.03469	38	29	47.368	81.579	75.862	68.966	13	100.000	304	2.0	0.50344	38	29	65.789	76.316	75.862	75.862	12	
292	0.03469	38	29	52.632	84.211	75.862	72.414	14	92.857	305	7.5	0.00592	38	29	34.211	63.158	41.858	58.621	19	
293	1.00000	36	26	63.889	66.667	78.571	78.571	11	54.545	306	2.0	0.53347	38	29	57.895	68.421	75.862	75.862	14	
294	0.03469	38	29	55.263	57.895	68.966	65.517	15	53.333	307	3.0	0.30746	38	29	57.895	73.684	75.862	75.862	16	
295	0.03469	38	29	39.474	55.263	37.931	37.931	14	71.429	308	2.5	0.22656	36	27	88.889	88.889	66.667	85.185	4	
296	0.03469	38	29	55.263	57.895	51.724	58.621	13	53.846	309	3.5	0.14316	37	28	75.676	83.784	53.571	67.857	9	
297	0.03469	36	29	33.333	47.222	34.483	34.483	11	72.727	310	4.5	0.07815	38	29	71.053	86.612	75.862	86.207	12	
298	0.32694	37	29	37.838	45.946	34.483	44.828	15	60.000	311	0.0	1.00000	35	29	91.429	94.286	93.103	89.655	3	
299	0.33475	35	29	17.143	28.571	17.241	17.241	6	83.333	312	-3.0	0.23788	35	29	80.000	65.711	99.655	86.207	11	
300	0.16864	35	29	31.429	48.571	48.276	55.172	12	75.000	313	4.0	0.03857	35	29	77.143	91.429	75.862	86.207	13	
301	0.16864	38	29	57.895	50.600	58.621	41.379	15	40.000	314	5.5	0.04323	35	28	65.714	85.714	67.857	82.113	7	
302	0.00210	38	29	78.947	52.632	75.862	48.276	20	25.000	315	-1.0	0.80362	35	29	88.571	71.286	75.862	86.207	9	
303	0.16864	38	29	76.316	71.053	79.310	58.621	16	43.750	316	1.5	0.69004	35	29	37.143	31.286	27.586	41.379	11	
CBS	HHHSH_DL	SWPC_DL	P2SAMMA2	DELTA2	DELTA_L	DELTA_DL														
291	10	40.0000	0.00197	0.41107	0.34211	-0.06897														
292	9	44.4444	0.00853	0.35027	0.31579	-0.03448														
293	10	50.0000	0.84877	0.02778	0.02778	0.00000														
294	7	42.8571	0.55613	0.06080	0.02632	-0.03448														
295	14	50.0000	0.32453	0.15789	0.15789	0.00000														
296	16	56.2500	0.79827	-0.04265	0.02632	0.06897														
297	10	50.0000	0.32414	0.13889	0.13889	0.00000														
298	11	63.6364	0.88197	-0.02237	0.08108	0.10345														
299	1	50.0000	0.23550	0.11429	0.11429	0.00000														
300	14	57.1429	0.52060	0.10246	0.17143	0.00000														
301	11	27.2727	0.53118	0.09347	-0.07895	0.06897														
302	12	16.5667	0.23119	0.01270	-0.26316	-0.07895														
303	10	20.0000	0.53189	0.15426	-0.05263	-0.27586														
CBS	HHHSH_DL	SWPC_DL	P2SAMMA2	DELTA2	DELTA_L	DELTA_DL														
291	10	40.0000	0.00197	0.41107	0.34211	-0.06897														
292	9	44.4444	0.00853	0.35027	0.31579	-0.03448														
293	10	50.0000	0.84877	0.02778	0.02778	0.00000														
294	7	42.8571	0.55613	0.06080	0.02632	-0.03448														
295	14	50.0000	0.32453	0.15789	0.15789	0.00000														
296	16	56.2500	0.79827	-0.04265	0.02632	0.06897														
297	10	50.0000	0.32414	0.13889	0.13889	0.00000														
298	11	63.6364	0.88197	-0.02237	0.08108	0.10345														
299	1	50.0000	0.23550	0.11429	0.11429	0.00000														
300	14	57.1429	0.52060	0.10246	0.17143	0.00000														
301	11	27.2727	0.53118	0.09347	-0.07895	0.06897														
302	12	16.5667	0.23119	0.01270	-0.26316	-0.07895														
303	10	20.0000	0.53189	0.15426	-0.05263	-0.27586														
CBS	HHHSH_DL	SWPC_DL	P2SAMMA2	DELTA2	DELTA_L	DELTA_DL														
291	10	40.0000	0.00197	0.41107	0.34211	-0.06897														
292	9	44.4444	0.00853	0.35027	0.31579	-0.03448														
293	10	50.0000	0.84877	0.02778	0.02778	0.00000														
294	7	42.8571	0.55613	0.06080	0.02632	-0.03448														
295	14	50.0000	0.32453	0.15789	0.15789	0.00000														
296	16	56.2500	0.79827	-0.04265	0.02632	0.06897														
297	10	50.0000	0.32414	0.13889	0.13889	0.00000														
298	11	63.6364	0.88197	-0.02237	0.08108	0.10345														
299	1	50.0000	0.23550	0.11429	0.11429	0.00000														
300	14	57.1429	0.52060	0.10246	0.17143	0.00000														
301	11	27.2727	0.53118	0.09347	-0.07895	0.06897														
302	12	16.5667	0.23119	0.01270	-0.26316	-0.07895														
303	10	20.0000	0.53189	0.15426	-0.05263	-0.27586														

VAR96	VAR91	SH3038	SH3039	SH3040	SH3041	SH3042	SH3043	SH3044	SH3045	SH3046	SH3047	SH3048	SH3049	SH3050	SH3051	SH3052	SH3053	SH3054	SH3055	SH3056	SH3057	SH3058	SH3059	SH3060	SH3061	SH3062	SH3063	SH3064	SH3065	SH3066	SH3067	SH3068	SH3069	SH3070	SH3071	SH3072	SH3073	SH3074	SH3075	SH3076	SH3077	SH3078	SH3079	SH3080	SH3081	SH3082	SH3083	SH3084	SH3085	SH3086	SH3087	SH3088	SH3089	SH3090	SH3091	SH3092	SH3093	SH3094	SH3095	SH3096	SH3097	SH3098	SH3099	SH3100	SH3101	SH3102	SH3103	SH3104	SH3105	SH3106	SH3107	SH3108	SH3109	SH3110	SH3111	SH3112	SH3113	SH3114	SH3115	SH3116	SH3117	SH3118	SH3119	SH3120	SH3121	SH3122	SH3123	SH3124	SH3125	SH3126	SH3127	SH3128	SH3129	SH3130	SH3131	SH3132	SH3133	SH3134	SH3135	SH3136	SH3137	SH3138	SH3139	SH3140	SH3141	SH3142	SH3143	SH3144	SH3145	SH3146	SH3147	SH3148	SH3149	SH3150	SH3151	SH3152	SH3153	SH3154	SH3155	SH3156	SH3157	SH3158	SH3159	SH3160	SH3161	SH3162	SH3163	SH3164	SH3165	SH3166	SH3167	SH3168	SH3169	SH3170	SH3171	SH3172	SH3173	SH3174	SH3175	SH3176	SH3177	SH3178	SH3179	SH3180	SH3181	SH3182	SH3183	SH3184	SH3185	SH3186	SH3187	SH3188	SH3189	SH3190	SH3191	SH3192	SH3193	SH3194	SH3195	SH3196	SH3197	SH3198	SH3199	SH3200	SH3201	SH3202	SH3203	SH3204	SH3205	SH3206	SH3207	SH3208	SH3209	SH3210	SH3211	SH3212	SH3213	SH3214	SH3215	SH3216	SH3217	SH3218	SH3219	SH3220	SH3221	SH3222	SH3223	SH3224	SH3225	SH3226	SH3227	SH3228	SH3229	SH3230	SH3231	SH3232	SH3233	SH3234	SH3235	SH3236	SH3237	SH3238	SH3239	SH3240	SH3241	SH3242	SH3243	SH3244	SH3245	SH3246	SH3247	SH3248	SH3249	SH3250	SH3251	SH3252	SH3253	SH3254	SH3255	SH3256	SH3257	SH3258	SH3259	SH3260	SH3261	SH3262	SH3263	SH3264	SH3265	SH3266	SH3267	SH3268	SH3269	SH3270	SH3271	SH3272	SH3273	SH3274	SH3275	SH3276	SH3277	SH3278	SH3279	SH3280	SH3281	SH3282	SH3283	SH3284	SH3285	SH3286	SH3287	SH3288	SH3289	SH3290	SH3291	SH3292	SH3293	SH3294	SH3295	SH3296	SH3297	SH3298	SH3299	SH3300	SH3301	SH3302	SH3303	SH3304	SH3305	SH3306	SH3307	SH3308	SH3309	SH3310	SH3311	SH3312	SH3313	SH3314	SH3315	SH3316	SH3317	SH3318	SH3319	SH3320	SH3321	SH3322	SH3323	SH3324	SH3325	SH3326	SH3327	SH3328	SH3329	SH3330	SH3331	SH3332	SH3333	SH3334	SH3335	SH3336	SH3337	SH3338	SH3339	SH3340	SH3341	SH3342	SH3343	SH3344	SH3345	SH3346	SH3347	SH3348	SH3349	SH3350	SH3351	SH3352	SH3353	SH3354	SH3355	SH3356	SH3357	SH3358	SH3359	SH3360	SH3361	SH3362	SH3363	SH3364	SH3365	SH3366	SH3367	SH3368	SH3369	SH3370	SH3371	SH3372	SH3373	SH3374	SH3375	SH3376	SH3377	SH3378	SH3379	SH3380	SH3381	SH3382	SH3383	SH3384	SH3385	SH3386	SH3387	SH3388	SH3389	SH3390	SH3391	SH3392	SH3393	SH3394	SH3395	SH3396	SH3397	SH3398	SH3399	SH3400	SH3401	SH3402	SH3403	SH3404	SH3405	SH3406	SH3407	SH3408	SH3409	SH3410	SH3411	SH3412	SH3413	SH3414	SH3415	SH3416	SH3417	SH3418	SH3419	SH3420	SH3421	SH3422	SH3423	SH3424	SH3425	SH3426	SH3427	SH3428	SH3429	SH3430	SH3431	SH3432	SH3433	SH3434	SH3435	SH3436	SH3437	SH3438	SH3439	SH3440	SH3441	SH3442	SH3443	SH3444	SH344
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The SAS System 16:31 Monday, September 13, 1993 27

CBS	VAR90	VAR91	IRH A	PCOMP90	PCOMP91	IRHSW	IRKGT0	IRHILTO	
343	T1239	T1239	27	100.000	100.000	0	0	0	
344	T1240	T1240	27	81.481	81.481	4	2	2	
345	T1241A	T1241A	52	90.385	80.769	7	1	6	
346	T1241B	T1241B	30	46.667	40.000	8	3	5	
347	XXXXXXXXXX	XXXXXXXXXX							
CBS	HSIGH	PSIGH	H L	H DL	PC90_L	PC91_L	PC90_DL	PC91_DL	IRHSW_L
343			17	10	100.000	100.000	100.000		0
344	0.0	1.00000	17	10	82.353	82.353	80.000	80.000	2
345	-2.5	0.12500	33	19	90.909	78.788	89.471	84.211	4
346	-1.0	0.72656	19	11	52.632	36.842	36.364	45.155	5
347									
CBS	SWPC_L	IRHSW_PL	SWPC_DL	P2SARHAC	DELTA2	DELTA_L	DELTA_DL		
343	0.000	0	0.600						
344	50.000	2	50.000	1.00000	0.00000	0.00000	0.00000		
345	0.000	3	33.333	0.52053	-0.06858	-0.12121	-0.05263		
346	20.000	3	66.667	0.19330	-0.24880	-0.15789	0.09091		
347									

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Mon Sep 13 15:03:59 1993

The SAS System
08:53 Monday, September 13, 1993The SAS System
08:53 Monday, September 13, 1993

CDS VAR90 VAR91 INH_A PCOMP90 PCOMP91 INHSH INHSTO INHILTO

```
1 xxxxxxxxxx xxxxxxxxxx
2 es4215b cd4215b_ 60 80.000 80.0000 18 9 9
3 es4188 es4188_ 67 95.522 95.5224 4 2 2
4 es4189 es4189_ 67 92.537 95.5224 6 4 2
5 es4070 es4070a_ 62 83.871 93.5489 12 9 3
6 es4070 es4055a_ 61 83.607 85.2459 15 8 7
7 es4157 es4157a_ 47 95.745 91.4894 6 2 4
8 es4155 dh4155_ 36 77.778 88.8889 4 4 0
9 n4029 es4029_ 51 33.333 49.0196 14 11 3
10 es4069 n4069_ 31 97.059 88.2353 5 1 4
11 es4089 n4089_ 58 100.000 94.8276 3 0 3
12 es4088 n4088_ 61 96.721 98.3607 3 2 1
13 DH4062 ES4062_ 32 56.250 56.2500 8 4 4
```

OBS MSIGH PSIGH H_L H_DL PC90_L PC90_DL PC91_DL INHSH_L

```
1 0.0 1.00000 36 24 86.111 75.000 70.833 87.500 10
2 0.0 1.00000 38 29 92.105 91.717 100.000 96.552 3
3 1.0 0.68750 38 29 94.737 97.368 89.655 93.103 3
5 3.0 0.14600 38 24 81.579 92.105 87.500 95.833 8
6 0.5 1.00000 36 25 80.556 77.778 88.000 96.000 11
7 1.0 0.68750 28 19 92.857 92.857 100.000 89.474 4
8 2.0 0.12500 19 17 94.737 100.000 58.824 76.471 1
9 4.0 0.05737 31 20 41.935 61.290 20.000 30.000 10
10 1.5 0.37500 22 12 100.000 86.364 91.667 91.667 3
11 1.5 0.25000 35 23 100.000 91.429 100.000 100.000 3
12 0.5 1.00000 36 25 97.222 100.000 96.000 96.000 1
13 0.0 1.00000 20 12 65.000 55.000 41.667 58.333 6
```

OBS SVPCL INHSH_DL SVPCL_DL P2SAHHAC DELTA2 DELTA_L DELTA_DL

```
1 30.000 8 75.000 0.65010 -0.27778 -0.11111 0.16667
2 66.667 1 0.000 0.28303 0.06080 0.02632 -0.03448
3 66.667 3 66.667 0.91238 -0.00817 0.02632 0.03448
5 75.000 4 75.000 0.84070 0.02193 0.10526 0.08333
6 45.455 4 75.000 0.37257 -0.10778 -0.02778 0.08000
7 50.000 2 0.000 0.29193 0.10526 0.00000 -0.10526
8 100.000 3 100.000 0.24137 -0.12384 0.05263 0.17647
9 80.000 4 75.000 0.19389 0.09355 0.19355 0.10000
10 0.000 2 50.000 0.32559 -0.13636 -0.13636 0.00000
11 0.000 0 0.000 0.67608 -0.08571 -0.08571 0.00000
12 100.000 2 50.000 0.65851 0.02778 0.02778 0.00000
13 33.333 2 100.000 0.09865 -0.26667 -0.10000 0.16667
```

CDS VAR90 VAR91 INH_A PCOMP90 PCOMP91 INHSH INHSTO INHILTO

```
14 es4064a n4064a_ 31 16.129 25.8065 5 4 1
15 es4065 n4065_ 33 81.818 90.9091 3 3 0
16 es4065a n4065a_ 33 33.333 39.3939 12 7 5
17 es4066 n4066_ 34 73.529 88.2353 7 6 1
```

OBS MSIGH PSIGH H_L H_DL PC90_L PC90_DL PC91_DL INHSH_L

```
14 1.5 0.37500 18 13 16.667 38.889 15.385 7.692 4
15 1.5 0.25000 20 13 80.000 90.000 81.615 92.308 2
16 1.0 0.77441 20 13 30.000 35.000 38.462 46.154 7
17 2.5 0.12500 21 13 76.190 95.238 59.231 76.923 6
```

OBS SVPCL INHSH_DL SVPCL_DL P2SAHHAC DELTA2 DELTA_L DELTA_DL

```
14 100.000 1 0.000 0.01480 0.29915 0.22222 -0.07692
15 100.000 1 100.000 0.81715 0.02308 0.10000 0.07692
16 57.143 5 60.000 0.90065 -0.02692 0.05000 0.07692
17 83.333 1 100.000 0.38850 0.11355 0.19048 0.07692
```

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Appendix D: ECELS Presentations and Consultations

National:

- * Association of Maternal and Child Health Programs
- * Head Start Health Institute, 1992
- * National Association for the Education of Young Children, 1991, 1992, 1993
- * Johnson and Johnson/American Academy of Pediatrics, 1992 Symposium, "Day Care for Children"
- * National AAP, Early Childhood, Adoption and Dependent Care Committee, American Academy of Pediatrics, Round-table on Health and Safety in Child Care, 1991, 1992
- * Centers for Disease Control, International Conference on Child Day Care Health, 1992
- * National Center for Education in Maternal and Child Health, 1/92 MCH Program Interchange
- * Administration for Children, Youth and Families, First National Child Care Conference, 1992
- * US Department of Agriculture, 12/92 issue of Food and Nutrition
- * Child Care Action Campaign, Child Care and Education, the Critical Connection, 1993
- * National Association of Child Care Resource and Referral Agencies, 1993

Pennsylvania:

- *(Lehigh Valley) Community Services for Children, 1992
- * Delaware Valley Association for Child Care Administrators, 1992
- * PA Committee on Aging and Youth (state legislature), Harrisburg, 1992
- * PA Department of Health, 1990, 1991, 1992, 1993
- * PA Department of Welfare, 1990, 1991, 1992, 1993
- * PA Governor's Policy Staff, 1990, 1991, 1992, 1993
- * Pennsylvania Head Start Association, 1991, 1992
- * New Directions in Child and Family Research - Head Start, 1992
- * PA Family Day Care Providers Association, 1990, 1991, 1992, 1993
- * PA Association of Child Care Administrators, 1990, 1991, 1992, 1993
- * Directors Seminar, 1992

Other States:

French-American Foundation Child Care Forums: Illinois, North Carolina
Region III, HHS Head Start Health Consultant's Conference
New Jersey Maternal and Child Health Conference
New Jersey Health and Child Care Conference
National Center for Clinical Infant Programs, Better Care for the Babies Project technical assistance for Illinois and Florida
North Carolina State Leadership Conference

Appendix D continued

ECELS consulted by state leaders on how to implement aspects of the project:

Arizona
California
Connecticut
Delaware
Florida
Illinois
Indiana
Iowa
Louisiana
Maryland
Massachusetts
Michigan
Missouri
Nebraska
New Jersey
New York
North Carolina
Oklahoma
Texas
Utah
Virginia
West Virginia
Washington
Washington, DC
Wisconsin

Appendix E

Discussion and Details of Data Analysis

Item-by-item Analysis

The tabulated data are listed alphabetically by item in the printouts titled "Listing for Rocky Feuer." Each item is labelled with letters that indicate an area of the health component measured by the item. The first number indicates the part of the instrument where the item is found (1-4). The last numbers in the label indicate the number of the item within the part of the instrument. Many items measure more than one part of the health component. However, for the listing, only one designation was generally used. For some items, the listing letters were changed between the 1990 and 1991 instruments. These items are listed on a separate listing, also titled "Listing for Rocky Feuer." For more explanation of the format of the instrument and use of symbols, see the explanations in the instructions to users at the beginning of the ECELS-C and ECELS-FCCH instruments.

Hypothesis 1: Compliance rates will improve between the 1990 and 1991 surveys for the study group as a whole.

The variables used to test the first hypothesis are:

pcomp90	= percent of compliant sites in 1990
pcomp91	= percent of compliant sites in 1991
numsw	= number of sites that switched compliance from 1990 to 1991, either from non-compliant to compliant or compliant to non-compliant
numgto	= number of sites that switched (gained) from non-compliant to compliant
numlto	= number of sites that switched (lost) from compliant to non-compliant
psign	= p value for the sign test

Stated mathematically, hypothesis 1 tests:

Ho: pcomp90 = pcomp91
versus
Ha: pcomp90 (not =) pcomp91

Since those sites that did not switch do not contribute to the change in compliance rates from 1990 to 1991, this hypothesis is equivalent to testing:

Ho: numgto/numsw = 0.5
versus
Ha: numgto/numsw (not =) 0.5

The statistical test used is a sign test, which is used as a small sample version of a McNemar test. The McNemar test is used to test for marginal homogeneity of two binary correlated variables.

Hypothesis 2: The linked sites will show greater gains in compliance between 1990 and 1991 than the delayed-linked sites.

The variables used to test the second hypothesis are:

pcomp90L = percent of compliant sites in 1990, linked in 1990 with a health consultant (linked)
 pcomp91L = percent of compliant sites in 1991, linked in 1990 with a health consultant (linked)
 pcomp90DL = percent of compliant sites in 1990, linked in 1991 with a health consultant (delayed-linked)
 pcomp91DL = percent of compliant sites in 1991, linked in 1991 with a health consultant (delayed-linked)
 numswL = number of linked sites that switched compliance from 1990 to 1991, either from non-compliant to compliant or compliant to non-compliant
 swpcL = % of linked sites that switched from non-compliant to compliant (positive switch) among the total number of sites that switched
 numswDL = number of delayed-linked sites that switched compliance from 1990 to 1991, either from non-compliant to compliant or compliant to non-compliant
 swpcDL = % of delayed-linked sites that switched from non-compliant to compliant (positive switch) among the total number of sites that switched
 p2sammac = p value for Two Sample McNemar Test

Stated mathematically, hypothesis 2 tests:

Ho: $(pc91L - pc90L) = (pc91DL - pc90DL)$
 versus

Ha: $(pc91L - pc90L) \text{ not } = (pc91DL - pc90DL)$

This test is conducted using a two sample version of the McNemar Test. This tests for equal marginal change in two independent 2x2 tables (Feuer et al, 1989). The p value for this test is left blank if there is no improvement in compliance in both the linked and delayed-linked sites.

The p value is left blank if either a) there are no switchers in either the linked or delayed-linked groups, b) all of the switchers in both the linked and delayed-linked groups switched from non-compliant to compliant, or c) all of the switchers in both the linked and delayed-linked groups switched from compliant to non-compliant. In all three of these cases, although the test p value could not be computed, it is clear that there is no evidence that

would lead to the rejection of H_0 .

Analysis of the Weighted Scores for the Linked and Delayed-Linked Sites

The question is: Did the weighted scores for the linked sites improve more than the weighted scores for the delayed-linked sites from the pre-test (1990) to the post-test (1991)?

To answer this question, we used an analysis of covariance model (See References in Appendix E.) The dependent variable in this model is the 1991 weighed score. We then tested for a difference between the linked and delayed-linked sites after adjusting for the pre-test score. The variable named "Linked" shows if there is a difference between the linked and delayed-linked sites. For example, for written health policies, the linked sites improved more than the delayed-linked sites, however, the model indicates only moderate statistical significance ($p = .06$). The graph shows the observed 1990 and 1991 data points for all 67 sites as well as the modeled relationship between the 1990 and 1991 scores for the linked and delayed-linked sites. The model indicates that for the linked sites:

$$1991 \text{ score} = 12.60 + 0.71 (1990 \text{ score}),$$

and for the delayed-linked sites:

$$1991 \text{ score} = 2.97 + 0.71 (1990 \text{ score}).$$

The implication is that for a specified 1990 score, the 1991 score is (on average) 9.62 units higher for a linked site than for a delayed-linked site.

Note that the modeled lines for the linked and delayed-linked sites are parallel. This is not always the case. For example, in the model for transportation, we added an extra term to test for lack of parallelism. This term ("LXS90_7") while only marginally significant ($p = 0.075$), suggested some lack of parallelism. The model for a linked site:

$$1991 \text{ score} = 21.38 + 0.63 (1990 \text{ score}),$$

and the model for the delayed-linked sites:

$$1991 \text{ score} = 46 + 0.33 (1990 \text{ score}).$$

The modeled lines indicate that a different conclusion must be made for different values of the 1990 score. For low values of the 1990 score, the delayed-linked sites improved more than the linked sites. For example, for a 1990 score of 30, a linked site would have an average score of 40, while a delayed-linked site would have an average score of 56. However, for high initial scores, there is

a ceiling effect. In this case, both the linked and delayed-linked were about the same (and actually may have declined from their 1990 levels). This type of phenomenon is common when there is a maximum possible score (in this case 100). The same ceiling effect is found in the weighted scale for child development/sexual abuse/parent involvement as shown on the graph.

Two other weighted scales demonstrated parallel models where the linked sites had marginal improvement over the delayed-linked sites. These were Documentation of Routine Health Services ($p = 0.156$) and Staff Health ($p = 0.126$).

The results for all of these analyses were only marginally significant, and may be in part due to the low power to detect differences because of the moderate sample sizes (38 linked sites and 29 delayed-linked sites).

References for Statistical Testing

Feuer EJ and Kessler LG. "Test Statistic and Sample Size for a Two Sample McNemar Test" Biometrics 1989; 45:629-636.

Fleiss JL. Statistical Methods for Rates and Proportions 2nd ed. Wiley: New York, 1981.
(McNemar Test)

Conover WJ. Practical Nonparametric Statistics 2nd ed. Wiley: New York, 1980. (Sign Test)

Agresti A. Categorical Data Analysis Wiley: New York, 1990.
(Fisher Exact Test)

Neter J and Wasserman W. Applied Linear Statistical Models Irwin: Homewood, IL, 1974. (Analysis of Covariance Model)

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WRITTEN HEALTH POLICIES

Model: MODEL1
Dependent Variable: S91_17

Analysis of Variance

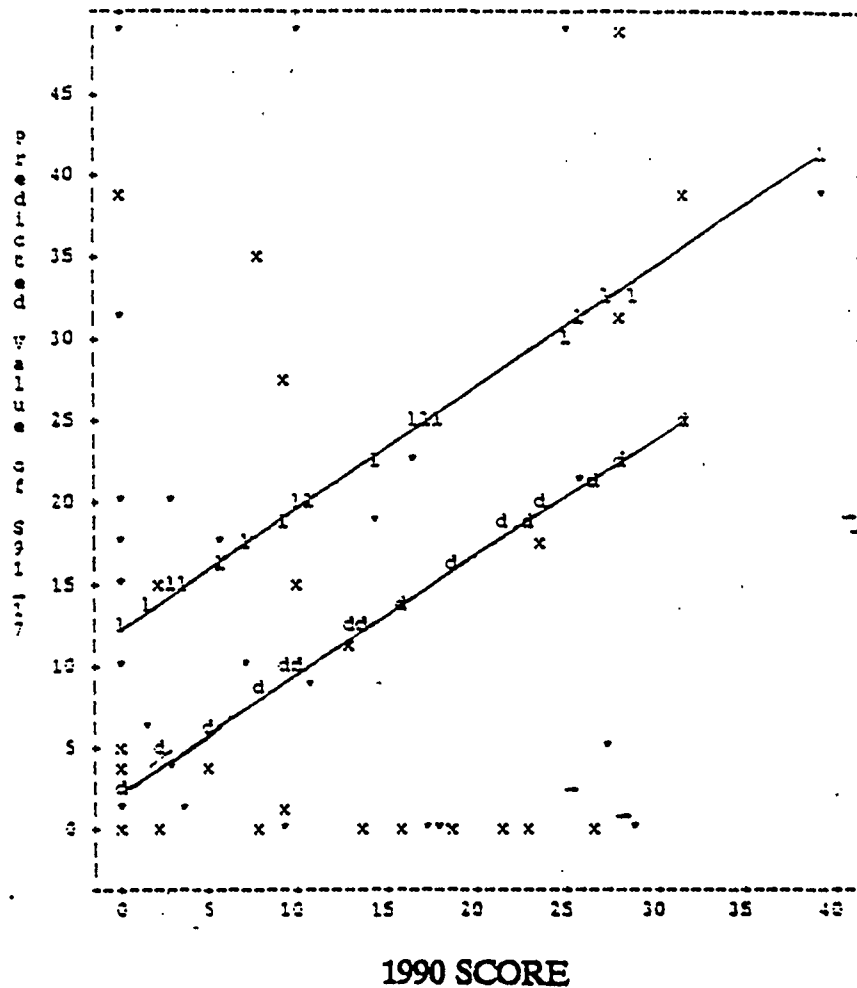
Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	2	4958.11414	2479.05707	5.944	0.0043
Error	64	26693.17263	417.08082		
Total	66	31651.28678			

Root MSE	20.42256	R-square	0.1566
Dep Mean	14.96715	Adj R-sq	0.1303
C.V.	136.44920		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > T
INTERCEP	1	12.596581	3.83786825	3.282	0.0017
S90_17	1	0.712463	0.23402463	3.044	0.0034
LINKED	1	-9.622061	5.05882871	-1.902	0.0617

1991
SCORE



*=LINKED
x=DELAY-LINKED
l=LINKED (MODEL)
d=DELAY-LINKED (MODEL)

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TRANSPORTATION

Model: MODEL2
Dependent Variable: S91_7

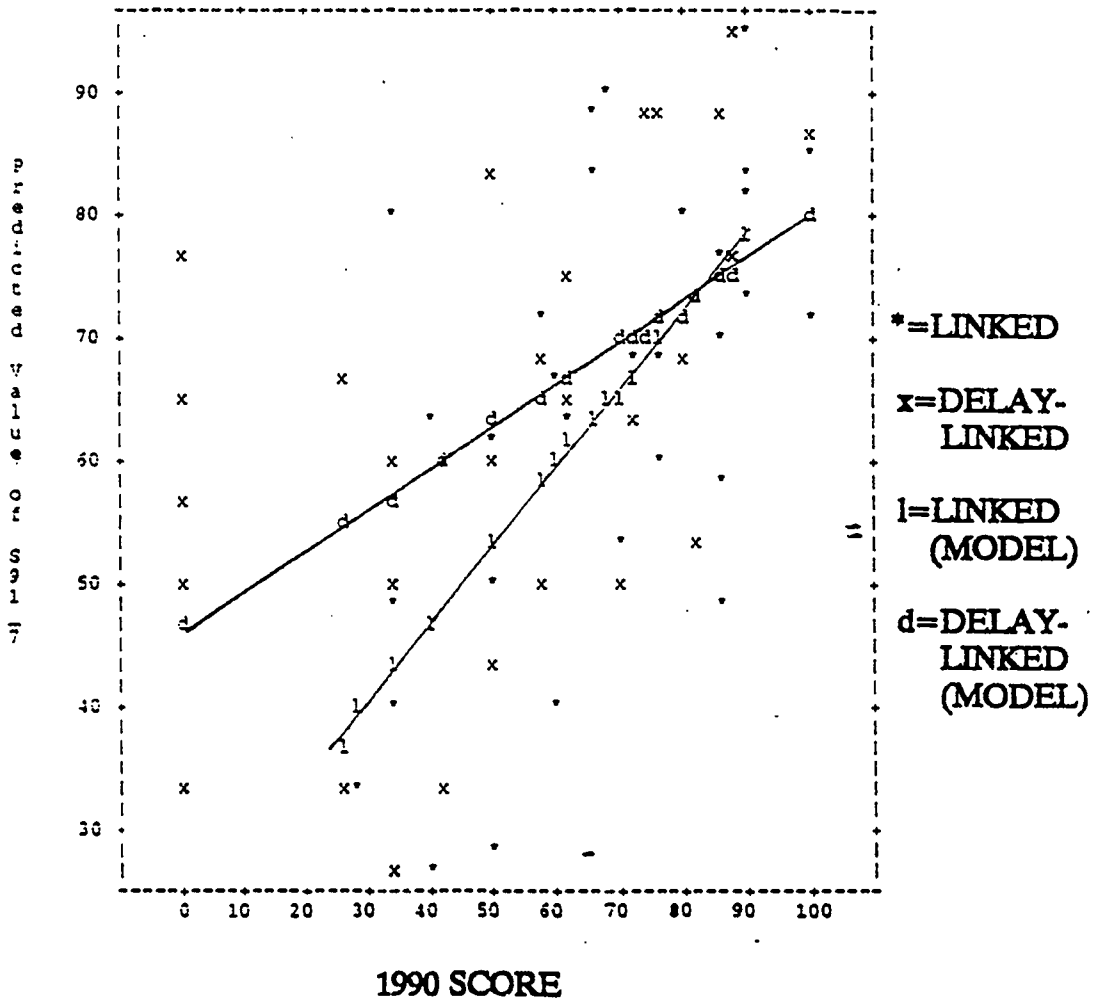
Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	3	10076.64800	3358.88267	11.393	0.0001
Error	63	18573.56989	294.81857		
C Total	66	28650.21789			
Root MSE	17.17028	R-square	0.3517		
Dep Mean	61.91101	Adj R-sq	0.3208		
C.V.	27.73381				

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > T
INTERCEP	1	21.388085	8.59953412	2.487	0.0155
S90_7	1	0.633924	0.12853515	4.932	0.0001
LINKED	1	24.616147	10.56553675	2.330	0.0230
LXS90_7	1	-0.301395	0.16671765	-1.808	0.0754

1991
SCORE



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CHILD DEVELOPMENT, SEXUAL ABUSE PREVENTION PARENT INVOLVEMENT

Model: MODEL1
Dependent Variable: S91_13

Analysis of Variance

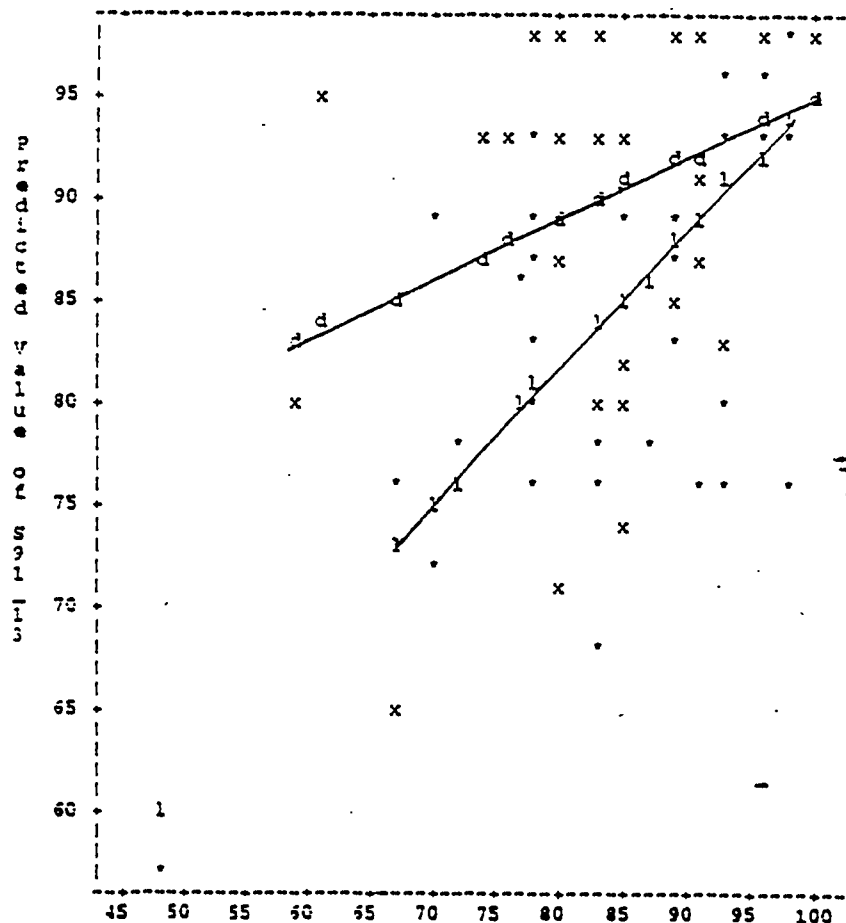
Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	3	2423.01935	807.67312	10.099	0.0001
Error	63	5038.52840	79.97664		
Total	66	7461.54775			

Root MSE	8.94297	R-square	0.3247
Dep Mean	87.21934	Adj R-sq	0.2926
C.V.	10.25107		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > T
INTERCEP	1	28.592879	11.94421928	2.394	0.0197
S90_13	1	0.665590	0.13961742	4.767	0.0001
LINKED	1	37.320058	19.20290019	1.943	0.0564
LXS90_13	1	-0.375271	0.22774026	-1.648	0.1044

1991
SCORE



*=LINKED
x=DELAY-LINKED
l=LINKED (MODEL)
d=DELAY-LINKED (MODEL)

1990 SCORE

APPENDIX F

Copies of ECELS Manuals/Booklets/Brochures/Publications

The Pediatrician's Role in Promoting the Health of Patients in Early Childhood Education and/or Child Care Programs

Committee on Early Childhood, Adoption, and Dependent Care

American families are changing; more parents are working, and most young children are being cared for in some form of child care.¹ To promote optimal child health and development, pediatricians should work not only with parents, but also with other caregivers, agencies, and organizations that are part of the child's and family's support system. This statement discusses the roles pediatricians should play in the care of infants and young children enrolled in early childhood education and child care settings.

ADVISING FAMILIES

Beginning at the prenatal visit and at each subsequent visit, the pediatrician should review the plans and arrangements that parents may have made for alternative care of their children. The child's adaptation to these arrangements should be reviewed.² The pediatrician should discuss with parents how they are balancing their work and family life. As a trusted family advisor, the pediatrician can help parents identify, evaluate, and choose among their child care options.

Adjusting Work and Schedules and Getting Help From Employers

When both parents work, they can sometimes coordinate their work hours to share the child's care or make arrangements with their employers to provide some child care at the work site. One or both parents might be able to arrange for part-time work while the children are very young. Some parents may want to share care with another family by staggering work and child care hours. Some families have relatives who are able and willing to provide good-quality, low-cost child care. One or both parents may be eligible for financial help from their employers for child care in community facilities.

Seeking Options for Out-of-Home Care

Once parents determine when they need child care, the pediatrician can discuss what type of care is developmentally appropriate for the age and temperament of the child. Some of the following out-of-home options may be better for individual children than others.

This statement has been approved by the Council on Child and Adolescent Health.

The recommendations in this policy statement do not indicate an exclusive course of treatment or serve as a standard of medical care. Variations, taking into account individual circumstances, may be appropriate. PEDIATRICS (ISSN 0031 4005). Copyright © 1993 by the American Academy of Pediatrics.

1. Small family child care homes provide care for six or fewer children in the caregiver's home. Although family child care tends to be isolated and unsupervised, this setting may be most appropriate for children who need a smaller, more intimate group.
2. Large family child care homes operate in someone's residence with more than one caregiver responsible for a group of 6 to 12 children at any one time. With two caregivers, backup for emergencies and mutual caregiver support are available.
3. Centers provide part-day or full-day programs of care and education for 13 or more children at one time. Well-run child care centers offer developmentally appropriate care and coordinated family support services.³

The name of the program does not define the type of service provided. Early child care and childhood education programs operate under many names, eg, Head Start, nursery school, preschool, early learning program, play group, child (day) care program, and baby-sitting service. Some programs care for children when they are ill; others strictly exclude children with any symptom of disease. Pediatricians should suggest that parents inquire whether a child care program serves only healthy children or allows children to attend with mild illnesses.

Parents of children with disabilities may need extra help in finding and adapting child care arrangements to meet their family's needs. These parents often bear a heavier financial, physical, and emotional burden than other parents. Supportive child care services not only free these parents for employment, but also reduce the stress of caring for a child with special needs. Pediatricians should review with parents and prospective caregivers the special facilities, procedures, and personnel required by the child.

Helping Parents Choose Child Care

Parents will value practical advice about how to evaluate and choose among the child care and early education options available to them. Pediatricians can advise parents to look for quality by observing staff-child interactions, the staff-child ratio, and group size. Caregiver qualifications, operating procedures, and facility design should be checked to be sure the program will be safe, nurturing, and capable of enhancing the child's growth and development. Unfortunately, many parents choose child care for cost and convenience, rather than for quality. Bro-

chures that contain checklists to evaluate child care programs are available from the American Academy of Pediatrics (AAP) and the National Association for the Education of Young Children.⁴⁻⁶ Pediatricians should urge parents to call their local child care resource-and-referral agency or license agency for information about specific services in the community.

Planning for Illness

Working parents need a plan for child care when their child is ill. Pediatricians should be sure families and their child care programs know how to judge when a child's illness requires exclusion from the child's regular care arrangement and when the child may return. The pediatrician can offer to review written health policies on management of illness used by the child's caregiver to check that they are medically appropriate. When a child is seen in the office for illness, the pediatrician should discuss whether and for how long the child needs to be excluded from child care. Visits to the pediatrician's office for the purpose of obtaining a note to certify that the child is well are costly to parents and rarely necessary. Physicians should provide information on sources of in-home or out-of-home sick child care for families in which a parent is unable to remain at home when the child is ill.

COMMUNICATION WITH CHILD CARE PROVIDERS TO PROMOTE THE HEALTH OF INDIVIDUAL CHILDREN

Communication among pediatricians, parents, and caregivers enhances the quality of care for children. Pediatricians are often asked to complete an information form for the child care center at routine preventive visits. The presentation of the form by the parent is a cue to ask the parent about the child care arrangement. In completing the form, the pediatrician should share with the caregiver information about the child's medical status, temperament, and special characteristics. Similarly, caregivers should be encouraged to share their valuable observations of the child and family with the child's physician by sending a note with the parent or, with parental consent, by calling the pediatrician to discuss concerns about the child. Parents are usually responsible for carrying information between health and education professionals. However, with prior approval from the parents, direct communication between the pediatrician and the caregiver by telephone or note may be more efficient and effective.

Information should be shared about the child with a chronic disease, the child who is developmentally immature, and the child who is having behavior problems. Pediatricians should provide written or telephone instructions to caregivers for children who need special attention while in child care. A prescription label will suffice for medications dispensed by a pharmacist. For over-the-counter medications, special procedures, and diets, the pediatrician may send a note or call the instructions to the child care program.

SERVING AS A CONSULTANT TO EARLY CHILDHOOD PROGRAMS

Operating an early childhood program involves many health issues, but few programs have any regular source of advice from health professionals. Early childhood professionals are often reluctant to ask for help from physicians who they think are too busy to serve as program consultants. Collaborative relationships between educators and health professionals should be built with positive experiences. To be effective consultants, physicians must listen to the concerns of early childhood educators and base their advice on realistic appreciation of the activities, priorities, and responsibilities of early childhood education programs. Child care programs that provide care for mildly ill children and children with disabilities need especially close working relationships with health professionals.^{3,7} The role of a pediatrician as a health consultant includes:

- discussing the concerns of parents and caregivers;
- providing advice regarding management of an urgent health problem;
- advising about the management of children with special health care needs;
- assuring that each child has a "medical home" for routine ongoing health care;
- identifying authoritative sources of health information and services related to sanitation, immunization, first aid, infection control, staff health questions, etc;
- linking early childhood programs with other health professionals and services;
- mediating disputes about program procedures among different health professionals who give advice to the program since they provide health care for individual children;
- training staff on health issues and identifying health training resources;
- consulting on the development of health education programs for children and parents;
- setting up routine surveillance for health and safety problems; and
- establishing and periodically reviewing written health policies and procedures.⁸

Effective health consultation to an early childhood program usually requires at least one site visit to see how the program operates and to determine what services the program staff desire. After observing the program, the health consultant should meet with key staff to discuss important observations, clarify priorities for further input, and develop plans. Once direct contact has been made, access by phone provides an ongoing link between the health consultant and the early childhood program. Many of the telephone contacts are requests for factual information that can be handled in the same way as parent telephone calls. A productive telephone relationship requires clear instructions to program staff about how to schedule and structure telephone contacts for efficient communication.

Caring for Our Children: National Health and Safety Performance Standards: Guidelines for Out-of-Home Child Care Programs, the health and safety performance standards jointly developed by the AAP and the American Public Health Association, can support the pediatrician who assumes the role of the health consultant to an early childhood program.³ Other resources include various AAP manuals, policy statements, journal articles and other related publications, local AAP chapter early childhood committees, pediatricians who specialize in child development, and health department personnel.⁸⁻¹³ Insurance coverage for community consultation under the pediatrician's medical liability policy should be verified with the carrier. Where coverage is not provided, pediatricians can advocate for mandatory inclusion of these activities in medical liability policies by using model legislation developed by the AAP and the American Medical Association.

ADVOCATING FOR EARLY CHILDHOOD EDUCATION PROGRAMS IN THE COMMUNITY

At the community level, pediatricians can work with parents and other local or state leaders to improve regulation and licensing of early childhood programs. Regulations are ineffective unless they are enforced by competent inspectors and supported by technical assistance to achieve compliance. This is especially true for immunization requirements. Pediatricians should support state legislation requiring immunization of preschool children and, in states where legislation has been passed, assure that early childhood education programs are in compliance with the law. Advocacy for improved licensing and monitoring requires familiarity with state and local regulations, regulatory bodies, and responsible personnel. The previously referenced publication developed jointly by the AAP and the American Public Health Association provides specific recommendations to improve regulations.³

Pediatricians also should advocate to improve the quality of child care by assuring that early childhood professionals receive adequate compensation and training and that appropriate funding is allocated for the care and education of young children. Increased financial subsidy of early childhood programs by society is needed because few parents can afford the full cost of quality child care. Such subsidies are routinely provided for school-age children, but subsidies are not available to the same extent for the care and education of young children.

RECOMMENDATIONS

To promote the health and development of children whose families use early childhood care and education programs, the American Academy of Pediatrics recommends:

1. The role of the pediatrician should include advising families about how to find and critically assess alternative types of child care and how to judge the potential impact of these choices on the health and development of the child.

2. Recognizing the confidentiality boundaries of parents and the expertise of child care providers, pediatricians should engage in three-way communication with early childhood education professionals and parents to promote the health and development of children for whom the pediatrician provides health care. To do this, pediatricians can complete those health forms requested by child care providers. In addition, pediatricians should solicit information about children with special health and developmental needs from caregivers as well as parents.
3. Pediatricians should work to improve the quality of child care in their communities by serving as consultants to and as advocates for early childhood education programs.
4. Pediatricians should work with other advocates to improve the availability of good quality child care choices in the community.

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Consultant

Susan Aronson, MD

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Promoting Children's Health and Safety Through Child Care

by Dr. Susan Aronson, CCAC Board Member

All children need protection from injury and infection, both of which can lead to discomfort, disability, or even death. But children need more than simple protection from danger. They need activities that promote healthy development and prevent developmental problems.

Advancing children's health involves traditional health services such as check-ups, immunization, screening tests and diagnostic services, as well as access to health care. In particular, children's health services must include good nutrition, dental health measures such as fluoridation, and opportunities to develop fitness habits and learning skills.

Exercise promotes health in many ways and, as a lifetime habit, contributes to the



Four-year olds from the Smithsonian Early Enrichment Center are shown participating in age-appropriate exercises at the U.S. Department of Labor Fitness Center in Washington, D.C. Under way for more than a year, this pilot of weekly sessions for preschoolers is being readied for replication.

prevention of heart disease, high blood pressure, lung disease, and obesity. The size and development of children's muscle mass and the amount of body fat are significantly affected by exercise.

A child's age is a key factor in determining appropriate health practices. Nourishing physical and emotional development in young infants requires considerably different techniques from those used for toddlers. The quality of child care is diminished when a caregiver is absent or ill. The old advice about eating right, sleeping right, and exercising to stay fit applies to child care staff, including administrators. Child care professionals must simulta-

neously function as protectors, role models, and teachers for children, as well as look after their own health and safety as adults.

Preventing the Spread of Infectious Disease in Child Care

The risk of transmission of infectious diseases in child care is a major concern for medical professionals. Reports of outbreaks of illness foster the perception that child care centers are places where germs are routinely passed from child to child. When newspapers or television pick up these reports, parents become anxious and guilty about exposing their

children to a possible increased risk of infection.

The risk of transmission of infectious diseases is increased when children or adults are gathered in groups for any reason. Generally, children in child care experience the same types of infection as do children who receive care only at home. Children in child care are occasionally exposed to unusual infections which then have an opportunity to spread and cause outbreaks of disease. However, outbreaks of unusual infectious diseases in child care are rare.

Maintaining a sanitary child care facility reduces the development and spread of infections. Ongoing programs are needed to teach the importance and techniques of hand washing, diaper changing and toileting, and food handling.

Children cannot see, feel, or smell germs, but they can learn to control germs without being frightened or confused. For example, by using a plant sprayer with water in it, while children simulate the sounds of a sneeze or a cough, child care providers can help children understand how a sneeze or cough spreads germs. Children can learn to turn their heads away from people when they cough

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Now Available

CCAC's Information Guides have just been revised and completely updated. The new eight Information Guides cover important issues ranging from care for young children to the rights of parents. Speaking of rights, a provider about to start a new business should know how to start a child care center. Information Guides are free to CCAC members. Non-members may receive a maximum of three free guides. For more information or to order the guides, contact: 19001 212 261-3151, 10001 212 261-3151, fax (212) 261-3151.

Correction

In the September/October issue of *Child Care ActionNews*, Kharon Hunter was improperly identified. Ms. Hunter has been a family day care provider for twenty-four years and is currently on the Board of the National Association for Family Day Care and serves as the regional representative for Kansas, Missouri, Nebraska, and Iowa.

In the President's Corner of the September/October issue, the donor of CCAC's first office space was listed incorrectly. We are grateful to the the National Organization of Women Legal Defense and Education Fund for generously donating office space during CCAC's early years.

... Promoting Health & Safety

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since covering the nose or mouth will put germs on their hands to be spread by touching. The technique of having a child turn his or her head into the upper arm can give the cough a cold shoulder. Practicing positive health behaviors as routines helps children adopt these behaviors as lifetime patterns.

Preventing Injury in Child Care

As many as three-fourths of all injuries occurring in child care are easily preventable. Lack of adequate supervision plays a secondary, but important, role to removal or modification of obvious hazards. Inspections of child care centers and family day care homes find well-recognized hazards, such as unsafe surfaces under playground and indoor play equipment. Hazards should be removed from the premises, modified by using special safety materials, or made inaccessible.

Injury, not disease, is the leading cause of death for children after the first year of life. Recent studies show that children experience medically treatable injuries in child care centers less frequently than when parents are providing care themselves. Moreover, injuries occur more commonly in family day care homes than in a child's own home. Although the majority of injuries that children experience in child care are

minor, the ones that are serious enough to require medical attention most often occur in gross motor play areas, such as on playground equipment.

Causes of injuries to children vary by the age level of the children involved. Reducing injuries can best be accomplished by methods that do not require a child to think or make conscious choices. For example, designing driveways that do not cross pedestrian walkways is a more effective means of preventing children from being struck by cars than teaching children to scan for cars before crossing driveways. When no passive means of reducing risk is possible, children should learn about safety and practice safe behaviors until they become routine.

Health Care Workers and Child Care Providers

Health professionals recognize the beneficial impact of preventative measures enacted through partnerships formed with early childhood educators and with parents.

The Pennsylvania Chapter of the American Academy of Pediatrics (AAP) has developed a statewide project called the Early Childhood Education Linkage System (ECELS). ECELS provides professional health consultation, training and technical help to improve the quality of early childhood education programs in Pennsylvania.

The Pennsylvania AAP organized ECELS with the aid

of the staffs of the Pennsylvania Departments of Health, Public Welfare, Education, and with the Office of the Governor, Region III Head Start Program and the U.S. Public Health Service. The project currently receives grants and contributions from the public sector and from private foundations. A statewide advisory committee of representatives from a wide variety of agencies and professionals in the public and private sector guides ECELS.

The early childhood programs targeted by ECELS include more than 9,000 Head Start programs, child care centers, family day care homes, group homes, and nursery schools. About 250,000 children, infants, toddlers, and preschool children attend these programs in Pennsylvania, many of which operate with little or no input from health professionals. ECELS supports existing relationships and develops new linkages between health professionals and early childhood programs. More than 700 experts in pediatrics, public health, dentistry, mental health, and nutrition have volunteered to work with ear-

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ly childhood programs. Using a computer registry, ECELS links them with local programs.

ECELS also provides resources on health issues to child care providers. In cooperation with the Pennsylvania Chapters of the American Red Cross and the Association for the Education of Young Children, ECELS helped train nurses as Red Cross Child Care Course Instructors and arranged for statewide caregiver training. ECELS offers a toll-free telephone line where early childhood program staff receive advice about health and safety. Materials can be borrowed from a free audio-visual lending library. In cooperation with the Pennsylvania Department of Health, ECELS also distributes a quarterly newsletter, "Health Link," to every licensed or registered early childhood program in the state.

During 1990, a sample of 148 randomly selected early childhood programs and 106 nurses participated in activities to test whether nurse-consultants could improve the quality of child care pro-

grams. The nurses received training from the Pennsylvania AAP on how to be health consultants and ECELS linked each nurse-consultant with a local child health physician who provided advice as a volunteer. Each participating program completed an annual self-assessment and after scoring and coding the data, ECELS prepared profiles listing the standards that an individual program failed to meet. These profiles were used by the programs to formulate corrective action plans.

ECELS used pooled pre-test data from the programs in the statewide sample to identify some common problems requiring statewide strategies and solutions. Among the areas targeted for special interventions during 1991 were: immunization, child care and food service staff training, model health policies, playground safety, traffic and fire safety education, and dental health.

The ECELS program presents a model of effective partnerships between health care workers and child care providers. By providing

health care advice and assistance to child care providers, health care workers can help improve children's health and safety.

*Dr. Susan Aronson is currently Clinical Professor of Pediatrics at Hahnemann University, and a practicing pediatrician in Pennsylvania. Additionally, Dr. Aronson is a Fellow of the American Academy of Pediatrics and a consultant on child health issues. This article contains excerpts from Dr. Aronson's latest book, **Health and Safety in Child Care**, 1991. HarperCollins Publishers, Inc.*



... A Growing Place

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Parents are a valuable resource for child care providers. Often parents are the experts on the best way to feed or lift their child, and are eager to share information with a caregiver.

How does children with disabilities affect other children in the program?

Before we accept any child into the program we look at the individual child and consider the structure of the overall group, and the demands on staff. We had one child in the program who couldn't stand and he got around by rolling. For a while all the kids tried rolling as a way of experiencing what they saw and exploring their own abilities. The staff doesn't separate out the children with disabilities from the other children, so all the children get the message that differences are acceptable.

Children with disabilities are children first. At Growing Place we say that every child needs attention as an individual regardless of his or her abilities.




... President's Corner

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is possible without the contribution and cooperation of CCAC's sponsors and members and the strong base built by Elinor Guggenheimer and the CCAC Board.



Child Care Action Campaign's mission is to stimulate and support the development of policies and programs that will increase the availability of quality, affordable child care for the benefit of children, their families, and the economic well-being of the nation.

To accomplish this, CCAC provides information and original research to parents, the general public, and to government and corporate policy makers about the needs of families and children. CCAC emphasizes the connection between these needs and the nation's prosperity, and advocates for additional investment in child care by employers, by labor, and by federal, state and local governments. 

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Role of the Pediatrician in Setting and Using Standards for Child Care

Susan S. Aronson, MD

ABBREVIATIONS. APHA, American Public Health Association; AAP, American Academy of Pediatrics; ECELS, Early Childhood Education Linkage System.

Standards for child care settings define expected performance. Other types of requirements applicable to operation of child care facilities include funding requirements, accreditation criteria, and regulations (legal requirements). During licensing inspections, program monitoring by funding agencies, evaluations by accrediting organizations, and self-evaluations, programs become aware of opportunities for improvement. The process of evaluation alone leads to improved program performance¹; the majority of providers want to do a good job.

When requirements are used for systematic surveillance, the compliance data generated identify problems to be targeted for quality improvement. Training, technical assistance, linkage to existing resources, and development of new resources are common interventions that lead to improved performance in child care programs. These interventions may be applied at the level of an individual child care facility or at any level involved with child care services. Thus, training and technical assistance may be given to caregivers, to licensors, to policy makers, or to the public.

A surveillance system should continuously measure the impact of interventions and focus attention on problems that require further corrective action. When performance data from individual programs are aggregated, they provide powerful tools to assess the need for communitywide interventions. Some changes cannot be accomplished within the limited resources of an individual child care facility. Sometimes program improvement requires one or more types of intervention at the community, regional, state, and/or national level.

Updating requirements, conducting surveillance to measure compliance with requirements, and analyzing data to target interventions and measure the impact of actions on program performance are the basic elements of a systems model for improving quality in child care (see Figure). Each element of this systems model offers opportunities for pediatricians to serve as advocates for children.

AMERICAN PUBLIC HEALTH ASSOCIATION/ AMERICAN ACADEMY OF PEDIATRICS STANDARDS

Increasing numbers of health professionals have become aware of potential health risks and benefits to children who are in group care. Without the input of health professionals, many opportunities for prevention of injuries, prevention of infectious diseases, and health promotion are missed in group care of young children. Over the past 50 years, a variety of national guidelines have been written by a number of organizations, but none included broad input from health professionals.

In a federally funded, 4-year project, the American Public Health Association (APHA) and the American Academy of Pediatrics (AAP) responded to the lack of health and safety guidelines for operation of early childhood care and education programs by developing the *National Health and Safety Performance Standards: Guidelines for Out-of-Home Child Care Programs*.² These standards can be applied at each level of the systems model for improving quality in child care. They can be used by providers of child care as a reference on how to handle specific aspects of program operation. They form the basis for development of other types of requirements and for drafting of surveillance tools to measure compliance with requirements. They are also a good reference for health professionals who serve as consultants to group-care programs for young children. In addition, the APHA/AAP standards are useful tools for policy makers who allocate resources for publicly supported services and quality-improvement activities.

The process leading to the publication of the standards was long and arduous. In the first 2 years of the project, a Central Steering Committee appointed two subcommittees: a Survey Subcommittee and a Standards Subcommittee. The Standards Subcommittee was made up of the chairs of 10 technical panels. The chairs of the technical panels were national experts who worked with the Central Steering Committee to identify other experts and early-childhood program operators to work on assigned topic areas. Demographic and ethnic balance among the technical panels was sought and achieved.

The topics assigned to the 10 technical panels which made up the Standards Subcommittee were chosen by listing the primary areas where children in group care were at risk. They became the titles of the 10 technical panels (see Table 1).

The Survey Subcommittee was appointed from the membership of the Central Steering Committee. The Survey Subcommittee had two tasks: the review of then-existing state and local licensing regulations re-

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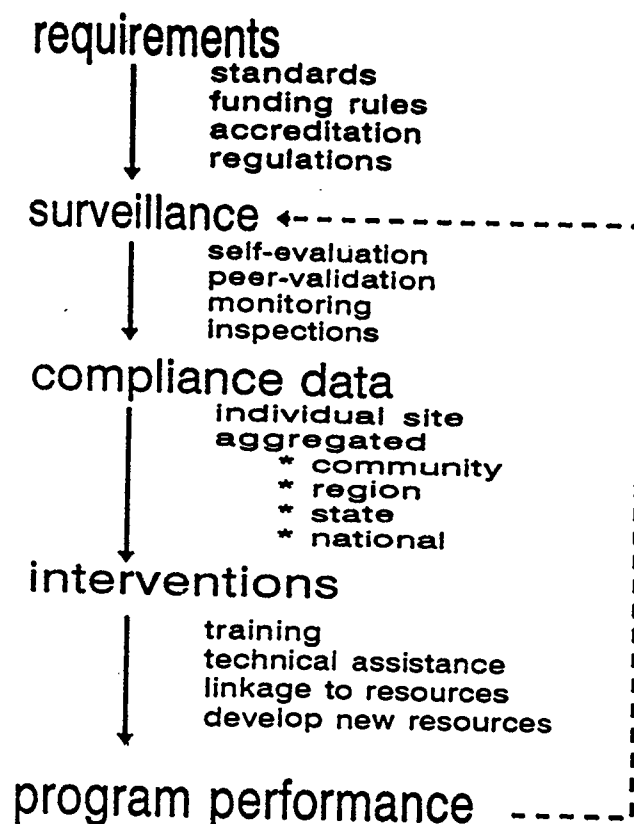


Figure. Systems model for improving quality in child care.

TABLE 1. Technical Panels for American Public Health Association/American Academy of Pediatrics Standards

Environmental Quality
Prevention and Control of Infectious Diseases
Injury Prevention and Control
General Health
Nutrition
Prevention and Management of Child Abuse
Staff Health
Children With Special Needs
Health Concerns Related to Social Environment and Child Development
Health and Safety Organization and Administration

lated to out-of-home child care and the identification of child care programs with exemplary practices in the content areas covered by the 10 technical panels. A nationwide search for child care programs with exemplary practices was conducted.

Each of the chairs of the 10 technical panels was asked to generate five standards for the Survey Subcommittee to include on a checklist that the Survey Subcommittee would use to review existing regulations. These were called "proxy standards" because they stood in for the requirements that had not yet been written by the technical panels. One criterion for choosing a proxy standard was that the technical-panel chair expected that its requirements were basic, necessary, and likely to emerge in a final recommended standard. The other criterion was that the technical panel wanted to know the extent of inclusion of the proxy standard in then-existing legal requirements, particularly where it was desirable, above the basic level or reflected new knowledge. Licensing regulations are generally applied to three

types of facilities: child care centers where children receive care in a facility that is used primarily for child care; large family-child-care homes where children are cared for by more than one caregiver in the home of one of the caregivers; and small family-child-care homes where there is only one caregiver and the care is provided in the caregiver's home.

During 1988, current licensing and registration regulations of 50 states and eight cities that license child care centers, 40 states and one city that license large family-child-care homes, and 48 states and five cities that license small family-child-care homes were reviewed for the presence or absence of the 50 proxy standards. The Survey Subcommittee found applicable regulations for centers in all 58 sets of regulations reviewed. Only 53 sets had applicable regulations for small family-child-care homes; only 41 had them for large family-child-care homes. The study of the licensing regulations conducted by the Survey Subcommittee gave a snapshot of the current status of regulation of child care that informed the standard-setting process.³

Many programs with exemplary health and safety practices were found. The existence of programs with exemplary health and safety practices suggested to the Standards Subcommittee that these practices are achievable in the context of day-to-day operation of child care facilities. Information on the way in which these practices are implemented by operating child care programs was included in the published APHA/AAP standards.

To the extent possible, the authors of the standards sought an objective, scientific basis for each standard. Each standard was accompanied by a rationale and, where appropriate, a comment that addressed suggestions on approaches to implementation. When research data documented adverse outcomes which would be avoided by complying with the standard, these data were cited. When no research data were available, the rationale used was the experience and judgment of recognized experts about the risk to be avoided by complying with the standard.

After the panels produced first drafts for their assigned areas, their recommendations were merged and reorganized into a single set of recommended standards. Next, members of the Central Steering Committee negotiated revisions among the panels to achieve consensus. The product of the consensus was then extensively reviewed by groups of intended users and further revised by the technical panels. Finally, the whole document was reorganized again to present the standards in the way child care service providers and state regulators approach program operation. Where the APHA/AAP standards overlapped with the recommendations of other organizations, these other recommendations were cross-referenced and/or included. The APHA/AAP standards are guidelines and are not enforceable as legal requirements on their own. To be enforceable, standards must be adopted as regulations or codes by legal entities with the power to administer sanctions.

The standards are organized into chapters that cover staffing, program activities, nutrition, facilities

and supplies, infectious diseases, children with special needs, administration, and recommendations for licensing and community action. Since many of the standards were the work of more than one technical panel, the technical panel source for each standard is no longer explicit in the published document. Now, the general areas recognizable in the standards are preventing injuries, preventing infections, and promoting health (including mental health and development).

The standard on playground surfacing is a good example of a requirement aimed at preventing injury. The most common cause of significant injury in child care is a fall to a hard surface from equipment for gross-motor play. Often, playground equipment is made and installed without concern for the developmental ability of children using it. When equipment is mounted over surfaces that do not absorb energy, children get hurt.

The Survey Subcommittee looked at existing regulations for a requirement that energy-absorbing surfaces are placed under climbing structures, swings, and slides. This requirement was found to be absent or less stringent than the APHA/AAP proxy standard in 60.3% of the regulations applied to centers, in 70.7% of those applied to large family-child-care homes, and in 83.0% of those applied to small family-child-care homes.

In the published APHA/AAP standards, the requirement for playground surfacing is explicit.^{3(p188)} Scientific data on incidence of injury and testing of materials to be used to reduce this risk accompany the standard. Installation requirements and examples of the types of acceptable materials are specified.

In the area of preventing infectious disease, a key standard is the requirement for adult hand-washing. The Survey Subcommittee found that the requirement for adult hand-washing at specified times was absent or less stringent than the APHA/AAP proxy standard in 24.1% of the regulations for centers, in 39.0% of the regulations for large family-child-care homes, and in 52.8% of the regulations for small family-child-care homes. In the published APHA/AAP standards, hand-washing by staff and children is required in all types of facilities before food preparation, handling, or service; after toileting or diapering; after handling pets; and after contact with body fluids.^{3(p72)}

In the area of health promotion, the standards focus on the basic needs of young children. Infants and toddlers need flexible, but regular, individualized routines. They need stable relationships with their caregivers and stimulating learning experiences. Their environments must be safe and designed to facilitate nurturing by their caregivers. Child care is a labor-intensive service. Staffing and group size are key features that determine the ability of programs to follow practices that promote the health of children in their care. Child-staff ratio and group size impact on the ability of the caregiver to interact meaningfully with individual children and to follow health and safety practices such as hand-washing and supervising potentially risky play. Child-staff ratio and group size also have a significant impact on cost.

The proxy standard on child-staff ratio used by the Survey Subcommittee required no more than four infants per adult in centers and no more than two children younger than 2 years of age in a small family-child-care home. In 1988, this requirement was not met in 43.1% of the regulations for centers and in 60.4% of the regulations for small family-child-care homes.

The proxy standard for group size for centers varied by age (as does the published APHA/AAP standard) and was less restrictive than the published standard. The proxy standard for group size in small family-child-care homes was no more than 6 children in the group, and for large family-child-care homes, no more than 12 children in care at one time. In 1988, the proxy standard for group size was not met in 82.8% of the regulations for centers, in 26.8% of the regulations for large family-child-care homes, and in 41.5% of the regulations for small family-child-care homes.

In the published APHA/AAP standards, a family-child-care home with one caregiver may have no more than six children, including no more than two children younger than 2 years of age. If any of the children are younger than 3 years of age, no more than four children may be in care. If all the children in care are younger than age 2, no more than three children may be in the group. The children of the caregiver are to be counted if they are younger than 6 years of age.^{3(p1)}

The published APHA/AAP standard for child-staff ratio and group size in child care centers is shown in Table 2.^{3(p1)} The staffing level for infants gives each caregiver an assignment similar to the experience of a parent who must care for triplets. While one caregiver is feeding or diapering a child, the other caregiver is responsible for five children by herself.

The standard on child-staff ratio was extensively debated. Cost was weighed against concerns for physical safety and child development. The recommendations shown in Table 2 are consistent with the recommendations of other recognized standard-setting bodies in the field of child care. These levels are considered minimal requirements for staffing and are to be combined with training requirements specified in other standards to provide adequate care.

Pediatricians must promote the use of the APHA/AAP standards in revising regulations and other requirements. While not all the standards will be incorporated, those that address the most significant risks should be given high priority. By explaining the

TABLE 2. American Public Health Association/American Academy of Pediatrics Standards for Child-Staff Ratio and Group Size in Child Care Centers

Age	Child Staff Ratio	Maximum Group Size
Birth-24 mo	3:1	6
25-30 mo	4:1	8
31-35 mo	5:1	10
3 y	7:1	14
4/5 y	8:1	16
6-8 y	10:1	20
9-12 y	12:1	24

technical rationale for a standard, pediatricians can help build consensus among providers, regulators, and policy makers necessary for adoption of the standard as a legal (regulatory) requirement. Economic competition for scarce public resources and parental inability to pay the true cost of child care must be balanced against the risk to children from poor-quality care. Incorporating high-priority standards as goals of practice is the first step toward improving the quality of service.

SURVEILLANCE

Where appropriate requirements exist, the quality of surveillance must be addressed. Surveillance should consist of systematic, accurate, reliable measurements of compliance with requirements. In a study performed in Colorado, environmental specialists from the health department visited programs 2 weeks after the licensing inspection and compared their findings with those of the licensing inspectors.⁴ While the licensing inspectors found only 25% of the programs deficient, the reinspection by the environmental specialists found that 94% of the programs were not meeting requirements for safe playground equipment or for reporting outbreaks of disease. Hot-water temperatures were above the permissible limit in 72% of the programs. The requirement for weekly sanitization of toys was not met by 76% of the programs. Toxic chemicals were accessible in 68%. Diaper areas were not sanitized as required in 65% of the programs; staff/child hand-washing was inadequate in 57%.

Much has been written about empowering parents as the primary means of maintaining surveillance. Unfortunately, many parents either do not recognize or overlook dangers to which their children are exposed. Because of their obligations as adult workers, parents seek child care at an affordable price, that is reasonably convenient, and thus may not be rigorous in evaluating quality. Many expose their children to hazards in their own homes and do not see these same conditions in child care as objectionable.

The role of pediatricians in improving the quality of care of children includes promoting the use of standards for meaningful surveillance systems. At the local and state level, pediatricians can promote self-evaluation, incentives for accreditation, and systematic checking of facilities by well-trained inspectors. By calling for systematic measurement of compliance, pediatricians can foster the development of a database to identify and implement needed interventions.

ANALYSIS AND USE OF COMPLIANCE DATA

Pediatricians should make themselves available for interpretation of individual and aggregate performance data and participate in problem-solving to improve the quality of care. This role may involve giving technical advice, participating in staff training, and linking child care programs to community health resources. In addition, pediatricians should use compliance data in their role as advocates for development of new resources to improve the quality of child care.

Quality is related to cost. Because early-childhood programs are badly underfinanced, care is being subsidized by low wages of caregivers. The result is high staff turnover. Caregivers earn much less than their same-sex, comparably educated counterparts in other educational settings. Few can afford to remain in the profession for long. With high staff turnover, no effort to improve the quality of child care will make much difference.

Regulations are legal requirements which define the floor below which no program is permitted to operate. This level is set by a combination of forces. Child advocates generally want the regulations to be set at a fairly high level to promote the well-being of children. Funding agencies usually want the regulations to be set at as low a level as possible so that their limited resources can provide as much care as possible. Providers generally want regulations set at a level that parents can afford, but that prevents low-price, low-quality competitors from luring parents to poor care.

As increased funding is provided, child care quality generally improves—to a point. Funding should be sufficient to maintain the legally required regulatory level of performance. To offer less mocks legal operation of child care. Optimally, funding should be at the level that supports compliance with accepted standards.

Currently, child care in the United States is caught in a trilemma in which tension exists among the factors of cost, quality, and affordability. In the labor-intensive child care industry, the primary contributor to cost is caregiver wages. Workers in the field of child care earn unacceptably low wages for the skill, knowledge, and intensity of work they do. Consider the skill and labor required to competently nurture three infants, four toddlers, or five preschool-age children day after day. When families are blessed with triplets, quadruplets, or quintuplets, extra helpers are usually sought, so that parents alone will not have to care for so many children at the same time. Yet a caregiver is expected to care competently for many young children during the most active part of the children's day.

Unlike conditions in other developed nations, the social investment in care and education of young children in the United States depends on what parents feel they can pay. For older children, local, state, and federal governments subsidize universal education and recreation services. For children younger than 5 years of age, the youngest and most vulnerable children, all but low-income families are expected to carry most of the cost unaided. Many affluent professional families undervalue and underpay for skilled child care. Even in families where both parents are in the labor force, child care costs are usually weighed against the mother's income rather than the family's income as the test of affordability. Paying to meet the APHA/AAP standards for child care requires a commitment to child care as a service for children as well as a necessity to enable parents to work. Pediatricians should couple compliance data with the rationale for the standards to help policy makers and parents make informed choices about investing in the care of young children.

WORKING WITH EARLY CARE AND EDUCATION PROFESSIONALS

Child care is necessarily a multidisciplinary operation. Especially with very young children, care and education are inseparable. The integrated model originally espoused as an ideal by Head Start for disadvantaged children is equally applicable to all early childhood settings for a "whole-child-and-family" approach. Some families need more support than others, but all families benefit from a holistic approach to child care that includes health, nutrition, child development and education, parent involvement, and referral to needed social services. Pediatricians and other health professionals must become involved in helping child care provide this holistic approach.

In Pennsylvania, the PA Chapter of the American Academy of Pediatrics is responding to the need for health professional involvement to improve the quality of child care. The chapter established the Early Childhood Education Linkage System (ECELS) in 1990. ECELS provides a hotline for child care providers to call for advice about health and safety issues. The Chapter has raised funds for an audiovisual lending library that providers use for preservice and inservice training for their ever-changing work force. ECELS also links child care programs with health professionals in their own communities, using a computer registry of health professionals who have volunteered to work with child care programs. Often the health professionals find themselves giving advice to caregivers who are responsible for daytime care of their patients.

ECELS publishes a quarterly newsletter for caregivers and health professionals who work with child care to communicate updated information on practices and resources to improve the quality of care. Through liaison with other community organizations, ECELS facilitates access to health and safety training resources in the community, such as the American Red Cross Child Care Course. ECELS also works with policy makers to educate them about ways to improve the quality of child care.

Some volunteer pediatricians in the PA Chapter develop informational materials for distribution to caregivers. Others work with the licensing agency to revise the regulations, participate in training, and advise licensing inspectors on health issues. ECELS uses data generated from self-assessments and regulatory inspections to formulate plans for corrective action, with the help of a statewide advisory committee composed of representatives of government agencies, health professional organizations, and child care providers.

ECELS has recruited more than 700 Pennsylvania health professionals to work with child care programs. Nurses who have a physician to provide technical backup seem to enjoy their roles as frontline consultants for child care programs. Successful consultation on child care issues involves use of the familiar problem-oriented approach to patient care.

Think of a child care program, state regulatory agency, or surveillance system as a patient. Subjective and objective data must be gathered, an assessment made, and a plan for further diagnosis of the problem, for treatment, and for education of the client formulated. Over a period of time, the consultant who sustains a continuing relationship can observe that programs grow, mature, and manage many challenges.

Serving as a consultant is a rewarding role for a child-health advocate, but there are drawbacks. Few child care programs can pay much for consultation. Medical liability insurance coverage for the role of program consultant must be checked. Although no case law is known to exist where a consultant has been sued for advice provided to a child care program or agency, health professionals should ask for confirmation that their carriers consider this role as a covered professional activity.

Through projects like ECELS in Pennsylvania, and work now under way in many other AAP chapters, consultation is being provided by pediatricians to state government for systemic change in child care. In Florida, Illinois, and Utah, the National Center for Clinical Infant Programs is providing technical assistance to state governments to foster collaboration among health and child care professionals. Support and exchange of ideas among pediatricians are occurring through the AAP chapter network and in round tables sponsored by the AAP Committee on Early Childhood, Adoption, and Dependent Care at national AAP meetings.

The health needs of school-age children is a well-established focus for pediatric input and for nursing support. Programs that serve younger children, who are inherently more vulnerable, tend to lack this focus. No established system exists to regularly involve health professionals in early care and education programs. Elsewhere in the world, health professionals are intimately involved with child care at every level, from operations to policy setting. Pediatricians and other health professionals must develop the mechanisms to collaborate with early childhood educators/caregivers, regulators, trainers, and policy makers to improve the quality of child care in the United States.

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NAEYC's standards for accreditation require a current written record of immunizations. Immunizations are virtually a universal state licensing requirement for children enrolled in child care programs. The table below has been developed to ease the task of assessing the completeness of a child's record of vaccinations. We ask those using the table to provide feedback on its effectiveness to NAEYC's Information Services department.

EARLY CHILDHOOD IMMUNIZATION DOSE COUNT TABLE

This table is to be used to check a child's immunization record for completeness. It is based on the routine schedule recommended by the American Academy of Pediatrics and the Centers for Disease Control of the U.S. Public Health Service. A health professional must individually evaluate the record of any child who has not been immunized according to the routine schedule.

FIND AGE OF CHILD	COUNT				REMIND PARENTS: AGES [months] WHEN VACCINATION IS DUE
	Total #DTP*	Total #OPV*	Total #Hib*	Total #MMR*	
3 to 4 mo.	1	1	1	0	[2 months]
5 to 6 mo.	2	2	2	0	[4 months]
7 to 15 mo.	3	2	2 or 3**	0 or only measles***	[6 months]
16 to 18 mo.	3	2	1-4**	1***	[12-15 months]
19 mo. to 6 yr.	4	3	1-4**	1****	[15-18 months]
7 years	5	4	—	1 or 2****	[4-6 years]

* DTP = diphtheria, tetanus, and pertussis vaccine; OPV = oral poliovirus vaccine; Hib = Haemophilus b conjugate vaccine; MMR = live measles, mumps, and rubella vaccine. The DOSE COUNT TABLE was prepared by Susan Aronson, M.D. and reviewed by CDC, 8/1/91. To update the table with new immunization recommendations, check with a pediatrician or the local Department of Health at least annually. For example, routine immunization with Hepatitis B vaccine is likely to be recommended by the end of 1991.

** Three different types of Hib vaccine are currently available. Each has a different dose schedule. Children over 5 years of age are not usually given Hib vaccine. Since the records maintained by parents often do not specify the type of Hib vaccine used, the completeness of a child's Hib immunization status should be certified by the child's health provider.

*** In areas where an outbreak of measles has occurred, single antigen measles vaccine (not MMR) is advised by the health department at 6 months of age. These children should still receive MMR at or after 12 months of age. In some areas measles vaccine is routinely given at 12 instead of 15 months of age.

**** A second dose of measles vaccine or MMR is recommended at or after 12 months for children who received a dose before 12 months of age. Another dose of measles vaccine (usually the second, but the third for those who received a first dose before 12 months) or MMR may be required before school entry in some areas.